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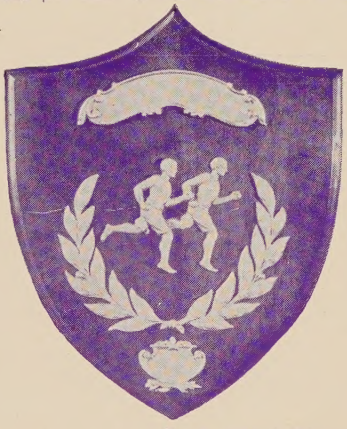

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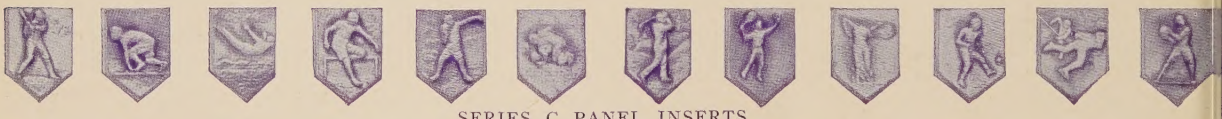

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The PENTATHLON

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Some Common Hazards in Physical Education Research

C. H. McCLOY

Research Secretary, National Council, Y. M. C. A., New York City

(Mid-West Convention Address)

RESEARCH in the field of physical education is sufficiently new that in many cases there has not yet been developed the sort of traditions with regard to training for the task that are comparable with the traditions of an analogous nature in such fields as those of physics, biology, medicine or general education. For this reason, among others, the research student of physical education problems is perhaps more apt to encounter some of the common hazards of research than is the well prepared student in other fields.

C. H. McCLOY

One conducting research in physical education is fortunate because of the fact that many of the variables, such as the anthropometric measurements of height, weight, circumference of trunk or limbs, depths and breadths, or the measurements of individual athletic accomplishment, such as speed in running and the heights or distances of jumps or throws, can all be measured with a high degree of accuracy with tape or stop watch. When we contrast this objectivity of measurement with the greater difficulties of measuring accomplishment in hand writing, in comprehension of material read, or of the vitality of protoplasm, we can appreciate how fortunate we are to have so many of our studies fall within these pleasant pastures.

Physical educators are, on the other hand, plagued with the fact that the personality and character behavior-patterns, which they wish to see the individual develop as a reaction to the situations created by physical activities programs, are among the most elusive of all of those things which anyone, in the whole educational field at least, desires to measure.

In addition to the difficulty of these measurements of subjective elements, many of the data associated with physical education research exhibit badly skewed distributions and curvilinear two-variable relationships such as demand statistical treatments of the most difficult and time consuming type.

In many cases no statistical techniques have as yet been devised to care for these problems, and workers in this field must needs first create their own tools before they can successfully attack such problems.

The study of physical education problems which fall within the nebulous boundaries dignified by the word "research" will meet many problems which present numerous hidden pitfalls. A few of the commonest of these I shall endeavor to point out. Such of these pitfalls as are discussed elsewhere I shall omit entirely.

There are a few important hazards which are of almost general application in that they are found in every phase of research.

1. The first is to set out to prove that something is true. This results in experi-

mental bias and an attitude of partiality. One tends to discount whatever negatives the result desired and to welcome corroborative evidence regardless of its validity. One should, of course, not set out with a desire to prove something, but with the sole desire to ascertain the facts, and should welcome evidence bearing on either side of the problem with equal enthusiasm.

2. One must in any case limit the field or "universe" from which one draws material. This limitation, with the elimination of individuals not falling within that universe, should not be done after data are secured but before. Elimination done before data are taken is done on well thought out philosophical grounds. To illustrate: In taking records of elementary school children in track and field athletics, individuals selected for testing might, let us say, be limited to grades five to eight inclusive. One might arbitrarily rule out all students more than 30 per cent over weight and all students more than 20 per cent under weight, and in addition eliminate students who had suffered from certain definite diseases within a specified time limit before the tests were taken. Cripples and other athletic artifacts would be eliminated as well. After this preliminary selection had been made, however, the records of each individual included should be utilized regardless of whether or not they contributed towards the expected conclusions. If, on the other hand, this elimination were left until after such measurements had been taken, there would be a somewhat overpowering temptation to eliminate a number of cases which might be quite a ways from the border line and which "spoiled the correlation."

3. One should not quote "authority" as fact without proof being demanded. It may be taken as opinion, but it should always be subject to challenge. In this same category comes the fallacy of stating the opinion of a committee or of a majority as fact.

Methods of research fall into a number of types. In this paper we shall discuss hazards connected with five of these types.

I. Historical Research.

Historical research is, as its name would indicate, a type of study which seeks to ascertain the fact concerning which there is no coherent organized record and which took place in the past. Among the common hazards in this field the following stand out:

1. There is the hazard of not going to source material. One needs to question, who was the author of this material? Did the author really know the facts? Was he in a position to know the facts? Did he see it happen or did he write from hearsay? Was he prejudiced? Was he a propagandist? Was the vehicle of publication a reliable one? Was the author interested in the result in a personal way? Did his country's prestige depend in any way upon his report? Was he a clear reporter? Are the facts clear from what he said? Would the author dare to speak his mind or might he be subject to official censorship? Was there perhaps sarcasm or irony intended rather than a direct statement? Do the various sources agree? Enough has been said to show that there are many hazards for one seeking historical material. In all cases official records should be sought as well as substantial material from other sources. In no case should one publish historical research based simply upon newspaper reports, talking with "old-timers," or based upon the reading of one document giving only one side of the question.

II. Descriptive Research.

This type of research endeavors to ascertain such facts as can be secured without experimentation. The most commonly used methods of securing the facts are, respectively, observation, the questionnaire, and case studies. The common hazards can be discussed under these three headings.

1. **Observation.** Not infrequently the sample observed is not at all typical or representative. One should not, for example, draw conclusions upon the excellence of Danish gymnastics after simply carefully observing the teaching of a student recently trained by an American teacher of Danish gymnastics whose own training has been simply a summer school in Ollerup. Said American teacher may have modified the Danish system or may have taught it badly, and the pupil may have further modified it or taught it still more badly. The conditions under which it was taught and the pupils who were taught may not have been suitable for the application of that system. To give another illustration, one should not base conclusions as to the effects of competitive athletics under the best conditions, after observing the exploitation of a women's basket ball team representing a commercial house and coached by an unscientific but over enthusiastic man. In other words, be sure that the observed phenomena are representative and typical and that the observation has covered all points to be studied.

2. **Questionnaires.** Perhaps the most common hazard in this field is that of assuming that the assembling of opinion by questionnaires shows fact. A moment's thought will make clear the fact that the opinions of 500 individuals who do not know the facts are probably of much less value than the opinion of one man who has at least carefully investigated the facts. The answers of 500 athletic coaches stating that they believe character values are developed in athletics and that they believe that such character values transfer to all situations in life is of little more value than simply a statement of the collective opinion of these men. None of them has measured such character development and practically none of them has studied the question. A few outstanding examples determine their reactions without considering those at the other end of the scale that have been evidence to the contrary.

The questionnaire also secures answers from a selected group. Those answering are apt to be those prejudiced for or against the question. A large number of individuals who have opinions but are not particularly interested in the study are apt to fail to return the questionnaire.

Another hazard with regard to questionnaires is that of asking leading questions. For example, if one asked, "Do you hate calisthenics?" perhaps 90 per cent would answer, "Yes." If the question were asked, "Do you like calisthenics?" probably at least 50 per cent would answer, "Yes." If the question were framed in some such manner as the following:

"Make a check opposite the statement below which best expresses your personal feeling towards engaging in calisthenics in a gymnasium class:

.... I enjoy it very much
.... I enjoy it to a moderate degree
.... Indifferent
.... Dislike it slightly
.... Dislike it very much"

the result would most probably be entirely different from the results secured by either of the questions previously suggested. There are numerous other hazards regarding the questionnaire but these are among the most common.

3. The Case Study.

This is usually done by interview. The most common hazard encountered here is that of the interviewer "selling" the proposition rather than simply securing an opinion. This results, of course, from one of the above mentioned hazards of starting out to prove something. This hazard can be avoided to a large degree by writing the questions in a fair minded way, either stating them in a neutral fashion or stating both sides of the question, and presenting this written statement to the individual interviewed after a short preliminary conversation designed to make the contact. The interviewer should keep his own opinion out of it as well as he can.

Another hazard common to both the case study and the questionnaire is that of giving weight to opinions of those who may be in a position to know something about the matter but who have given it no thought and who as a result tend to deliver their first reaction.

III. Philosophical Research.

Philosophical research is concerned with the interpretation and integration of known fact and applying it to fields in which knowledge is less secure. An illustration of this would be the application of the laws of learning and of the fundamentals of educational method which have been developed in the more easily experimentable fields of general education, into the field of character education in which experimentation is less easy. Such a philosophical application is entirely justifiable pending more adequate experimentation. Common hazards in this field of research are at least three in number:

1. Philosophizing in the new field without basic knowledge of the all relevant facts in the other field, at present adequately validated. To avoid this hazard, of course, means that one must become thoroughly prepared in the first field before philosophizing regarding the second.

2. A very common error is seen when an individual assumes that results secured through experimental research in an experimentally isolated way will necessarily apply to the broader field of education to which it is to be introduced. To illustrate, if experiment should prove that one could secure results in the teaching of skills in a class of 90 which were just as adequate as results secured in smaller groups, one would not be justified in assuming that a class of 90 was to be desired. The obvious reason is that one has not proved that other educational results are equally well secured in this large class. A study would have to be made of the other phases of the question.

3. A third common fallacy is the assumption that one's philosophy, which may be based primarily upon one's opinion, however well thought out, is fact. It is, of course, simply an hypothesis, and subject to proof or disproof at any time. This fallacy is closely associated with the tendency to quote from other philosophical authorities as "proof" of one's contentions.

IV. Experimental Research and Causal Research.

I shall discuss these two together. Experimental research involves the set up of an experiment in such a way as to adequately control all of the experimental elements except the one to be studied, and then to determine the effect of the experimental variable. For example, one might select two groups of pupils equivalent in every way in general education, physical make-up and other phases of the social environment. One might give equivalent tests of achievement to each group and then give a physical education program containing, let us say, a program of Danish gymnastics to the one group, and to the other group give a program alike in every respect except in that of having another type of gymnastics work substituted for the Danish. At the conclusion of the experimental period further tests would be given to ascertain differences in improvement, either positive or negative, of the two groups.

Causal Research is, after a fashion, experimental research done backwards. It endeavors to measure various traits or skills of one or more groups and then by some appropriate means, usually that of some phase of the correlation technique, endeavors to isolate the factors influencing or related to the result. In both of these types of research statistical methods are commonly applied and the hazards met have much in common. Some of the most important are as follows:

1. The drawing of conclusions from insufficient numbers is a mistake very frequently made. This is especially true of physiological experimentation. Conclusions are apt to be published regarding human functions based upon results obtained upon two or three dogs, and even among these dogs there may be no small degree of variation. The difficulties and expense involved in a physiological experimentation makes this hazard difficult to avoid. In general, however, statistically reliable results are seldom obtained with information based upon less than 300, and even with this number conclusions drawn from the extremes of the range are apt to be of rather doubtful reliability.

2. In any experimental research "validity" must, of course, be secured. This means that one must be sure that he is experimenting with and measuring the traits which he wished to measure. In many phases of experimental and causal research, elaborate experiments are built upon extremely shady criteria. Motor ability tests, for example, must be predicated upon, first, knowledge of what motor ability really is; second, upon an accurate estimate of motor ability in the individuals experimented with. This in turn postulates that the estimators are thoroughly acquainted with all individuals judged by them and that said estimators are skilled in the techniques of judging and blessed with an extraordinary degree of discrimination. Unless these criteria can be met, the experiment may correlate the experimental traits or variables against very unreliable criterion traits or variables.

3. A hazard commonly met is the lack of an adequate scoring device. The present use of the "T" score, which postulates normality of distribution with its concomitant mesokurtosis, is not flattering to our faculty of critical discrimination.

4. There are a number of hazards connected with the use of statistical methods. These hazards might be discussed for a long period of time without exhausting the subject. An excellent discussion of some of the more "advanced" difficulties to be met is seen in a recent publication by Miss Burks. I shall here discuss only a few of the more common ones, which are in general not discussed in her paper.

(a) Many erroneous conclusions result from making unjustified assumptions and either in testing for them or assuming that they are not important. One of the most common of these is to assume normality of distribution. Very many of the formulae given in the elementary text books are based upon this assumption. I have examined over 200 distributions of physical educational measurements and have found only a bare half dozen that could have classified as normal. There is a common tendency to consider any unimodal distribution, which upon inspection does not seem to be markedly skewed, as being normal. It is much more safe to assume, in the field of physical education, that one does not have normality of distribution.

Another common pitfall is that of assuming that all two-variable correlations have rectilinearity of regression and the use of them without adequate testing for the purpose of computing partial correlations and multiple regressions. Here again in this field it is safer to assume that correlations are non-rectilinear in regression until the opposite is proved.

A third assumption is that the commonly presented formulae for probable errors can be used uncritically. With the exception of the formula for the probable error of the mean, almost all are based upon an assumption of normal distribution and, in the case of the probable error of correlation coefficients, are based upon an assumption of a normal correlation surface. I have examined over 500 such correlations surface in the field of physical education and have yet to find one that presents a normal correlation surface. Obviously, conclusions based upon these assumptions are open to question.

A fourth assumption is that the common type of multiple regression is necessarily the optimum relationship between variables. The fact that a product of certain powers of height and weight gives higher correlations with lung capacity than do any multiple regression formulae should challenge us to experimentation in other lines.

A fifth assumption is that low correlations are meaningless. This is far from the truth. If one were to find, for example, in a random sample of the population from a homogeneous universe that participation in athletics gave a correlation of .20 plus or minus .01 between participation in athletics and persistence in attacking school work, this would be very significant indeed. While it would only make approximately a 4 per cent difference, yet a 4 per cent difference, if attributable to athletic participation and spread over a sufficiently large section of society, would be very significant indeed. Pearson has found some such relationships in a recent study.

(b) Another type of hazard associated with statistical research is that of securing spurious correlations. There are two types of these:

The first type is that of assuming a causal relationship between things actually uncorrelated. For example, if one were to take all ages from six to, let us say, twenty, there would undoubtedly be found a high correlation between the length of the index finger and the ability to high jump. This, of course, would indicate no relationship between these two things, but would be based upon the fact that small children who cannot jump high also have short fingers, while the older individual, who jumps higher, has longer fingers. The real relation, of course, is between size of body and age as influencing each of these two variables and not in the relationship of the two variables to each other.

A similar type of spurious correlation is frequently secured in traits which really do have a causal relationship, by lengthening the range. For example, weight and lung capacity in college students, in which age is not a factor, give a correlation of .57. The same two variables over an age range of from 7 to 20 give a correlation of .91. This latter correlation is simply due to the length of the range. This does not mean, of course, that no correlation should be used over a range of this size, especially when compared with other correlations over the same range. It does mean, however, that the range factor should be noted and that it should enter into the interpretation.

(c) An exceptionally common hazard met in statistical research is that of the neglect of the factor of common sense. The text-book emphasis upon the use of the arithmetical mean, for example, has blinded many to the fact that in a few situations, the median is the more reliable and is to be preferred. Many crimes are committed in the name of statistics and many because of the fact that someone simply "takes a pint of fact and without application of common sense whips it up into a barrel of statistics."

In this paper no discussion will be undertaken of those common essentials to experimental and causal research of objectivity, validity, reliability and the like. These are all adequately discussed in text books upon this subject.

The existence of the above hazards in physical education research should sober members of our profession to the realization of the need for more adequate research techniques in our field and to the desirability of creating as rapidly as possible a body of traditions appropriate to our need. It would seem desirable at this stage of our science to secure more co-operation in the formulation and set-up of research projects and in the checking of the progress of such projects from time to time as will enable the experimenter to avoid these and other research hazards. With the development of suitable traditions and technical procedures, together with an increasing mastery of the various

(*Concluded on page* 48)

Ancient Swimming

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SWIMMING is an art of high antiquity in the fortunate lands which border the Mediterranean. Three thousand years before the beginning of the Christian era the people of Egypt had a word meaning "swim" which they represented ideographically by the figure of a swimmer. Three forms of this ideograph are to be found in the Pyramid Texts. In its earliest form (fig. 1) it appears as the entire figure of a man in a horizontal position, with his arms extended, one forward and the other back, and with his feet separated in a vertical direction, the toes pointing downward. The next step toward simplification was the elimination of the legs (fig. 2), and the ideograph now appeared as the head, arms, shoulders, and upper part of the body rising above the surface of the water, and partly surrounded by a broken line, which may represent waves. In this form of the ideograph the arms are extended as before, one forward and the other back. Further simplication was effected by eliminating the body (fig. 3). Head and arms were sufficient to identify the figure, and the position of the arms, which remained unchanged, expressed the idea the writer wished to convey.

Whether the accomplishment thus indicated was general among the dwellers by the Nile five thousand years ago we can only guess, but by the time of the Middle Kingdom (2160-1780 B. C.) swimming instruction had become a regular part of the education of the aristocratic classes. This is at least a natural inference, for a certain nobleman of that time states with some pride that his children were taking swimming lessons with the children of the royal household. The statement is certainly suggestive of formal instruction by a competent teacher, and indicates in an unquestionable manner a lively interest in physical training. In a well-to-do Egyptian family the swimming instructor would probably be one of the household slaves, but in a royal family even slaves assume certain quasi-official importance and even dignity, so that the children of the king and their noble playmates were doubtless supervised, as they splashed in the Nile, by a man of somewhat enviable position.

We know nothing of the methods of instruction employed by this old-time swimming teacher, but if they were successful his

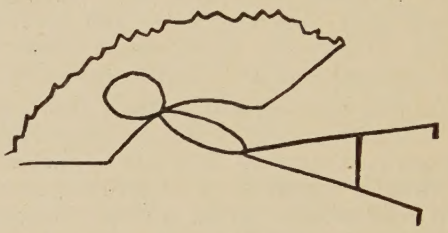


Figure 1. Earliest Symbol for "Swim"

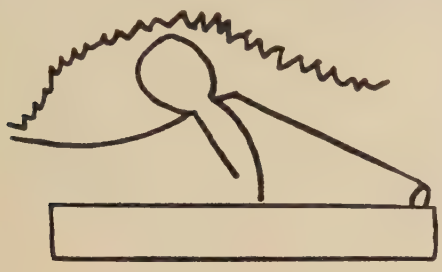
pupil probably mastered an overhand stroke similar to the one used by natives of the islands of the South Seas, from which the modern "trudgeon" and "crawl" have been

Figure 4. Hittites Fleeing at the Battle of Kadesh

NOTE: Figures 4, 5, 6, 7, 8, and 9 reproduced by courtesy of ART AND ARCHAEOLOGY, Washington, D. C.

developed. It is very apparent from the ideograph already described that the swimmer's arms were not used together, as in the English breast-stroke, but alternately, for one arm is shown reaching forward and the other is extended backward, leaving no doubt that an over-arm stroke is represented.

This kind of stroke was also used in the later times of Rameses II (1292-1225 B. C.). When that young ruler met the Hittites at Kadesh, in northern Syria, he turned apparent defeat into victory, smote the enemy hip and thigh, and pursued them to the Orontes River. Throughout Egypt scenes from this battle were subsequently carved on temple walls. A portion of such a carving (fig. 4) shows the Hittites fleeing across the Orontes to escape the fury of the young Pharaoh's onset. The King of Aleppo, far-spent, has reached the right bank of the river, where vigorous first aid measures are being employed by his friends in an effort to revive the fainting monarch. Other Hittites, still in flight, have just gained the friendly shore, and are being drawn from the water by their comrades-in-arms. Others float lifeless in the stream.



Figures 2 and 3. Later Forms of the Word "Swim" in the Egyptian Picture Language (hieroglyphics)

In the upper left-hand corner of the illustration appears a fugitive swimming vigorously to the right in the hope of gaining safety. He is on his left side, with his left arm extended far forward, his right arm stretched back at his side, and his feet separated moderately in a vertical direction. His face is turned upward, and he appears to be glancing back past his right shoulder toward the attacking Egyptians. There can be little doubt that he is using an overhand stroke; the position of the body, the arms, and the legs constitutes conclusive evidence on this point. Of course, the swimmer is a Hittite, but the artist who depicted the scene was an Egyptian, and we may safely conclude that in the time of Rameses II an overhand swimming-stroke of some kind was familiar to dwellers by the Nile.

Reliefs which have been discovered at Nineveh indicate that the Assyrians also practiced the overhand stroke. One Assyrian relief (fig. 5) depicts a group of soldiers crossing a river. On the left, one of them, who has not yet entered the water, crouches on the bank, inflating the skin he intends to use as a float. Another, supported on a skin, is in mid-stream, puffing and paddling, swimming with his right hand and clasping the skin with his left. The third soldier, swimming entirely without support, is making for the shore at the right. His body is flat in the water—that is, the line of his shoulders is horizontal—and his face, raised well above the surface of the water, is turned to the bank before him. The upturned palm of the left hand and the downturned palm of the right certainly indicate that the two arms are being employed, at the moment, in different movements, ,such as are natural to the overhand style of swimming. The right arm has evidently left the position of its farthest forward reach, and has passed through the first portion of the downward and backward sweep. The left, with the palm turned up, has just completed a stroke, or is being raised from the water to be carried forward for the beginning of a new stroke. The legs of both men in the water are slightly separated in a vertical direction, and their toes are turned downward. One of the swimmers wears a pointed Assyrian cap, but otherwise they are all naked save for girdles of moderate width.

It is sufficiently clear that an overhand stroke stroke was used by the Assyrians, but it is no less obvious that they commonly made use of inflated skins in their swimming, for it is the exception, rather than the rule, that Assyrian swimmers are shown without them. Possibly the use of floats indicates a want of proficiency in swimming, but this is by no means a certain inference. It is a matter of interest that, according to Xenophon, some of the Ten Thousand Greeks who accompanied Cyrus the Younger on his expedition against his brother in 401 B. C. adopted a similar practice and filled hides with hay, that they might cross the Eu-

Figure 5. Assyrian Soldiers Crossing a River

phrates upon them and so buy necessary provisions.

Among the Greeks, both those of Asia Minor and those of Greece proper, swimming was a common accomplishment. It could hardly be otherwise, for they were a seafaring people, most of them lived close to the bright waters of the Mediterranean. Doubtless it was among the Greeks of the Ionian coast that the story was first told of Leander, the fortunate youth of Abydos, who nightly swam the Hellespont to a rendezvous with the lovely priestess Hero. The girl awaited his arrival in the prison tower to which she had been confined, holding a lamp at her window to guide her lover through the darkness. All went well while the weather held fair, but when the too ardent young man ventured forth on a stormy night his strength failed him as he battled his way toward his love, and he sank in the waves. Neither romantic Lord Byron nor novelty-seeking Halliburton have detracted from the charm of the old tale by demonstrating that it is no impossible feat to swim the Hellespont. No Greek ever made the claim that it was impossible in fair weather, and no Byron or Halliburton, so far as I am aware, ever made the attempt on a stormy night.

Perhaps some hardy American will endeavor to equal the feat of Scyllias, the Macedonian. He had been pressed into service against Greece by the Persian king, Xerxes, but eventually made good his escape to the side of the Greeks by swimming under water a distance of approximately ten miles! This on the authority of the Father of History, who, it must be admitted, is himself somewhat sceptical regarding the story.

Thucydides, the most sober of historians, tells how some Spartans who were besieged by Athenians on the island of Sphacteria during the Peloponnesian War were saved from starvation by men who swam into the harbor under water, drawing after them sacks containing food. The anchor ropes of an enemy's vessels were sometimes cut by divers, and during the siege of Syracuse divers sawed off, under water, piles which the Syracusans had driven down as a barricade against Athenian boats.

Fabulous or credible, these stories of Greek swimmers or divers almost invariably indicate that the art was regarded most highly for its utilitarian values. A man who could swim and dive might make his livelihood by diving for sponges or shellfish; he might be able to cross a stream at a point where no bridge had been built; he might swim to safety if his boat capsized, or if he were be-

ing pursued by an enemy. So important did the ability to swim appear to the Greeks that they regarded as uneducated a man who had not acquired the art. Plato, in his "Laws," mentions a popular saying of his day in which an ignorant man was described as one who could "neither swim nor read," from which we can safely conclude that the Greeks not only felt that the ability to swim was an important part of a man's education, but that they generally possessed it.

Although it was for utilitarian ends that swimming was encouraged, it doubtless added to a summer day's pleasure as well. Nonnus, an Egyptian who lived most of his life in Greek Alexandria and adopted the culture and language of the Greeks of the fifth century of our era, affords some evidence on the matter. He draws a word picture of Dionysus, the wine god, and his attendant satyrs frolicking in the water. One satyr merrily kicks up his heels and dives with a splash; another swims; a third dives deep, grasps a fish, and coming to the surface, presents it to the god. Then pot-bellied, mis-shapen Silenus, from some high vantage point, puts the satyrs to shame by a sudden dive to the river's very bottom. Dionysus meanwhile swims with divine serenity, and flowers burst into bloom along the bank where his glance rests. In another passage the same poet describes a swimming contest between Dionysus and his friend Ampelus, in which the desire for victory seems almost to be lost in the enjoyment of the sport.

Since the Greeks attached such importance to swimming, and were so fond of organized athletic contests, it is surprising that we find almost no reference to actual swimming contests among them. This may be in part due to the fact that the great festivals were celebrated at points not immediately adjacent to the sea. The only place where swimming contests were regularly held in ancient Greece, so far as we know, was an insignificant little town in Argolis, known as Hermione, where swimming and rowing contests were held each year in honor of Dionysus.

Artificial swimming-pools were not unknown among the Greeks, but were usually rather small, to judge from the remains of those which have been excavated. A scene from such a pool is shown on a famous vase by the artist Andocides (fig. 6). A pillar, and bathing caps hanging upon pegs, suggest a roof and enclosing walls. At the sides of the picture are nude women who have finished bathing or are preparing to enter the bath. In the center is shown a woman who is obviously swimming in a pool. That there may be no mistaking the fact the artist has placed two fish in the scene with

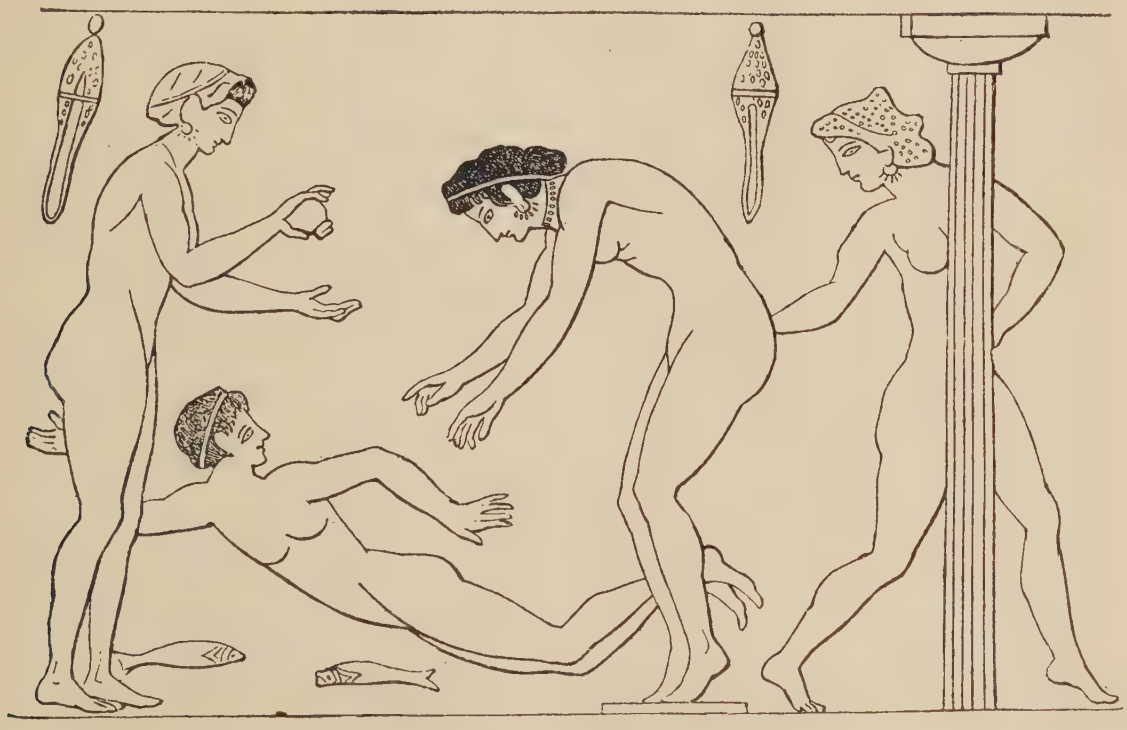


Figure 6. Greek Women at a Swimming Pool

her. The woman is swimming toward the left, and lies in a slightly oblique position on her right side. Her face is turned upward, and she looks back past her left shoulder, apparently at a companion who is about to make a plunge from a diving-platform. Her right arm is extended forward to begin the downward and backward stroke, and her left arm is near her side at the end of a stroke, or about to be raised from the water. While the woman's shoulders are in a nearly vertical plane, the plane of her hips is almost horizontal. Her legs are bent slightly at the knees, and her feet are close together, with her toes pointing downward. This position of the legs is a bit awkward, but it is quite apparent that the woman is using an overhand stroke. That it is a double stroke is suggested by the horizontal plane of the hips, a position which would be very unnatural to the user of a single overhand stroke. This inference is substantiated by literary references to swimmers who "pull" the water with their "hands" (plural) and "strike" it with their feet, and a less certain reference to the rolling of the body as first one arm and then the other is used.

The Romans found in the Tiber River a convenient place to bathe and swim, and legends of Rome's early years bear testimony to the fact that they did not neglect this opportunity. Every English reader is familiar with the story of Horatius at the bridge, recounted for us by Macaulay in his "Lays of Ancient Rome." Lars Porsenna, it will be remembered, was leading an attack upon Rome. Horatius guarded the far end of the bridge which gave access to the city until the portion which lay behind him was destroyed. Then, fully armed, he leaped into the Tiber and swam to safety. During the course of the same war, the Roman maiden Cloelia and a group of other Roman girls, who had been given as hostages to Porsenna, made a pretext of wishing to bathe in the river. When their guards had discreetly withdrawn, the girls escaped by swimming to the other side of the stream and joining their own people.

Horatius set a splendid example for Roman soldiers of a later day, who commonly showed as little hesitation as he about entering the water. At the fatal battle of Lake Trasimenus armed Roman soldiers attempted to swim across the lake. On Caesar's first expedition to Britain the soldiers jumped from their boats into water so deep that they could scarcely maintain their footing. On the second expedition to Britain the Roman army had to cross the Thames, and Caesar comments on the speed with which the crossing was effected, though the water was so deep that only the heads of the soldiers protruded. During the campaign of Lerida in the Civil War, Caesar's soldiers implored their general to let them wade through the Segre River in pursuit of the Pompeian forces, although the water came to their shoulders and the current was so swift that it swept a number of men off their feet.

This readiness to venture into the water was undoubtedly the result of the regular training of new recruits for the army, for Vegetius, in his book on military life, states that newly enlisted men must be taught to swim, since bridges are often wanting and rivers are often swollen, so that in either flight or pursuit much may depend upon the soldiers' ability to swim. This instruction, says Vegetius, should be given not only to infantry, but also to cavalry and to wagon drivers, and at every suitable opportunity soldiers should be given practice in swimming. Dio Cassius, the Greek historian of Rome's wars, tells of cavalry so excellently trained that they swam the Ister with their arms. Not every soldier became an adept at the art, however, for Tacitus speaks of Roman legionaries who were water-shy as compared with the Germans.

It was taken for granted that every Roman youth would know how to swim, just as he would know how to ride, whether he looked forward to joining the army or not. Doubtless the art was sometimes acquired in a more or less fortuitous manner, as is frequently the case today, but swimming instructors must have been found both in and out of the army. We are told that the elder Cato refused to leave the instruction of his son to slaves, but took upon himself the duty of educating him. He coached him not only in the "three R'S," but in athletic exercises as well, and taught him how to swim the "yellow Tiber." In like manner the Emperor Augustus, who was very fond of his grandsons, instructed them in "reading and swimming and other elementary subjects."

Children, it appears from a statement of the comedy-writer Plautus, learned to swim with the assistance of something similar to "water-wings," using a kind of support made of reeds. Sometimes bark was substituted for the reeds, for the father of the Latin poet Horace gave his son much homely advice, in the hope that when the boy attained young manhood he would be able to "swim without the cork." Roman youths frequented the Tiber's banks, where they tried their skill and strength on dry land and in the

river. Horace tells of a champion swimmer who had fallen prey to the charms of some lady, and was no longer seen in athletic contests with his fellows. Had the poet been an athletic coach his wail would doubtless have been more bitter.

The type of swimming stroke most commonly employed by the Romans was undoubtedly that which has already been described for the Greeks. A wall-painting from Herculaneum displays a swimming figure in

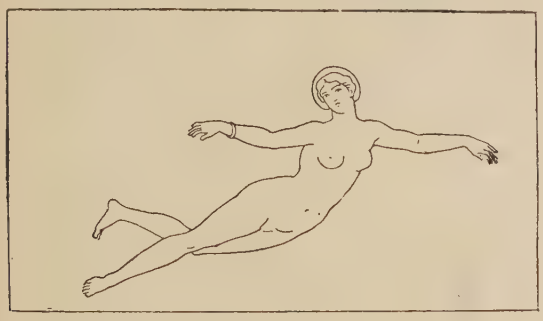


Figure 7. Swimming Figure from Herculaneum.

such clear outline, and so free from irrelevant detail, that it may well be taken as the standard for artistic representations of this kind (fig. 7). The swimmer is a woman, who is shown on her left side, facing the spectator and moving toward the right. Her body is not in the almost horizontal position in which the Egyptian and Assyrian swimmers were shown, but is in an oblique position, gently and gracefully curved. Her head is held nearly vertical, and well out of the water. Her left arm is thrust far forward as if to begin the downward and backward pull. Her right arm is extended far back at the end of the stroke, and is about to be raised from the water to be carried forward to the beginning of a new stroke. Her feet are somewhat apart, with the right leg forward and apparently a little lower in the water than the left. Her left leg is bent back and flexed slightly at the knee. There is no doubt that the artist intended to represent an overhand arm stroke of some kind, accompanied by a scissors-stroke of the legs. Certainly he has not depicted the kind of movements used in swimming "frog-fashion."

At Henchir-Thina, in northern Africa, there was excavated in 1904 the remains of an extensive public bath of Roman times. A large circular mosaic was discovered under the great dome of the frigidarium, on which is depicted a miscellany of marine groups. In the upper left-hand corner of the portion which is here reproduced (fig. 8) may be seen Europa being borne off over the sea by her god-lover, who has assumed the form of a bull. Below and to the right appears Venus, the sea-born goddess, on a shell which

Figure 8. Marine Scenes from African Mosaic.

Figure 9. A Mosaic Portraying Life along the Nile.

is partly supported by two Cupids. At the bottom is the ship of Odysseus, with the hero tied to the mast that he may listen to the fatal song of the Sirens while his mariners, their ears stopped with wax, row past the perilous rocks.

It is the little group in the lower left-hand corner, depicting the mournful story of Hero and Leander, which is of especial interest. In the distance to the left is Abydos, represented by the low tower or castle, at whose foot grows a palm tree which leans far over the fishy depths. On the shore near the tower sits an old man with a crown and heavy robes, resting his head upon his hand in a disconsolate manner. This is Leander's father, the king. To the right, nearer the spectator, is another tower, from whose high window Hero is leaning, lamp in hand. Between the two towers Leander toils along toward the right, his body buoyed up by serrate waves. He is unquestionably employing an overhand stroke, for while his left arm reaches forward, the right is extended back, and the position of the legs is clearly such as a modern user of the trudgeon or crawl might assume.

Another north African mosaic, now in the museum at Sousse, represents scenes from the Nile country (fig. 9). The mosaic is of the so-called crystalline type, in which, as in the foregoing example, unrelated subjects are presented in juxtaposition. Musicians, sailing in a boat, are playing upon pipes; priestesses offer sacrifices; pygmies fight with ibises; a man with a long, slender axe is about to strike a hippopotamus. At the left a crocodile has half swallowed an ass, whose tail and hind quarters are being pulled by two men in an apparently vain hope of rescue. Among the ibises and crocodiles and lotus blossoms are three swimmers, entirely without clothing, except for an armlet and collar worn by one, evidently a woman.

One of the swimmers is shown near the center of our illustration, moving toward the right. He is not turned so far on his side as is customary in representations of Roman swimmers, and his face looks forward, being shown in profile instead of fully, as in other examples. Most unusual of all, both arms of this swimmer are forward. There is little probability, however, that the breast-stroke is represented by this attitude, for the feet are in the position which is characteristic of the scissors-stroke, a leg motion employed with side-strokes or overhand strokes of the arms.

We do not lack for literary evidence to

(*Continued on page* 40)

The Health and Physical Education Program of the Kalamazoo Public Schools

ETHEL ROCKWELL

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THE fact that health is physical, mental and emotional is kept in mind in planning and administering the curriculum for the Kalamazoo Public Schools. The Health and Physical Education program includes:

1. A Healthy Environment
2. Health Service
3. Health Education
4. Physical Education.

1. Environment.

Kalamazoo has fourteen school buildings. Eight of these are used entirely for elementary school pupils (kindergarten and grades 1 to 6). Five schools include, besides elementary pupils, junior high students (grades 7, 8 and 9), and one building is used exclusively by the senior high school.

During the last ten years the Kalamazoo Board of Education has been carrying on a building program, which has included the construction of five entirely new buildings and the remodeling of practically all of the other buildings. Consequently, at the present time the buildings as a whole are in splendid condition—well lighted, well ventilated, with adequate toilet and hand washing facilities, sanitary drinking fountains both within the buildings and upon the playgrounds. In nine of the fourteen buildings there are shower baths, which provide opportunity for many children whose homes lack bathing facilities.

In all early elementary rooms (kindergarten, grades one and two) and in many of the later elementary, junior and senior high schools the furniture is movable and an effort is made to have it in all cases suited to the needs of the children.

Health rooms are provided for the use of school physicians and nurses, and separate rest rooms for the use of children and teachers are found in nearly every building.

Two of the buildings, Central High and Lincoln, have swimming pools, which are kept in satisfactory condition by sanitary methods. The boys wear no suits. The suits, towels and bath curtains used by girls are furnished by the Board of Education and are laundered each time they are used. Each swimmer is required to take a soap bath before entering the pool, and no pupils with colds or other infections are allowed to swim.

The pools are provided with filters. Each morning the filters are back washed and the sediment taken out. An ultra violet ray is in constant use and as an additional precaution chloride of lime is added daily to the pools. At regular intervals the water is entirely changed and the pools scrubbed. According to tests made by the city bacteriologist and the reports made by the State Director of the Bureau of Engineering at Lansing, the pools are kept in excellent condition.

At least one gymnasium is found in every school, and in most of the buildings there are two and in some three. In some cases these are supplemented by play rooms. The average size of these gymnasiums is about fifty by sixty-five feet, although some are larger than this and some smaller.

The usual indoor equipment includes horizontal bars, four to six mats, jump standards, rubber quoits, bowling equipment, basket ball and volley ball equipment, balls of all kinds, and in a few places climbing ropes.

Each gymnasium has an office for the use of the Physical Education teachers, equipped with scales, first aid supplies, etc.

Each school has a good playground, equipped with swings, teeters, horizontal bars, sand boxes, jumping pits, jump standards, tether poles, horse shoes, jumping ropes and balls of all kinds. Every playground has space adequate for the playing of soccer, field ball, volley ball, baseball, and other team games and for the practice of various athletic events. Strong fences for the protection of children from street accidents are being placed around the grounds as rapidly as possible.

Sanitary methods are used in cleaning the buildings, so that floors, windows, walls and furniture are kept in satisfactory condition.

Lunch rooms are conducted in the senior high school and in two junior high schools, under the direction of the Home Economics Department. Well balanced and nutritious

meals are served at small cost. The lunch rooms serve as effective health education factors in the schools.

The buildings present a homelike and cheerful atmosphere. Plants, pictures, attractive and artistic furnishings are in evidence. In many of the kindergartens there are fireplaces. Branch libraries are located in nearly every building. The school grounds are made attractive by trees, grass, shrubs and flowers.

2. Health Service.

The Health Service staff includes two part-time physicians, three nurses, one part-time dentist and one dental hygienist.

The school physicians examine yearly all pupils entering kindergarten for the first time, all third, fifth, ninth and eleventh grade pupils, and all children entering the schools for the first time in any grade. The school physicians also co-operate in the pre-school clinics, which are held each spring for all children who are to enter the kindergarten the following fall, make inspections to discover contagious diseases, inspect pupils after illness, and make sanitary surveys of the buildings. They hold conferences with parents and endeavor to have parents present during the examination of kindergarten and first grade children.

The school nurses take charge of the follow up work after examinations, as directed by the school physicians, take charge of first aid work, visit homes to discover contagious diseases, make sanitary inspections in buildings, arrange for operations for pupils whose parents are unable to pay for the services of a physician, give advice to parents regarding diet, conduct Little Mothers' Clubs, supervise the Open Air School and nutrition classes, test the eyes of children in kindergarten and grades one, three and five, and co-operate with the home room teachers in weighing and measuring children in kindergarten and grades one and two.

The school dentist attends to dental work for children whose parents are unable to pay. The dental hygienist yearly examines and cleans the teeth of all children in the kindergarten, grades one, two, three and four, and notifies parents of needed dental attention.

The co-operation of a great number of other individuals helps to make the health service effective. The building principals supervise and adjust the health service programs within their buildings, arrange for milk lunches and attend to various other details. The home room teachers inspect the children and refer them to principal, school physician or nurse for needed attention, and help in the follow up work after examinations by the physicians. The physical education supervisor arranges for posture and foot examinations for children at the clinics and assists and advises in the adjustment of building problems. The physical education teachers weigh and measure the pupils in grades 3 through 12. The visiting teacher adjusts many matters between school and home.

3. Health Education.

An effort is made to have health education which results in effective health habits, attitudes and knowledge, permeate the whole school program and to have this program steadily become more inclusive as the children grow older. Health education programs vary within buildings.

The most satisfactory plans have been the ones made by health committees appointed within the buildings. An effort is made to have the health center around the home rooms, with the co-operation of all other teachers—art, literature, music, physical education, etc. Various projects have been undertaken, such as cleanliness campaigns, posture campaigns, campaigns to have all teeth in perfect condition, good food projects, etc.

In general the plan has been to establish good personal health habits in the elementary grades and to stress good community health in the junior and senior high schools.

Opportunities for health teaching arise from various situations, such as home room, language, literature, play, rest or lunch periods, health clubs, health reading, the use of various sanitary facilities (such as showers), absences from school because of contagion, etc.

4. Physical Education.

A natural program of physical education is provided, in which an attempt is made to help children "to do better the desirable things they will do anyway, and to reveal higher activities and make them both desired and to an extent possible."

An effort is made to provide opportunities for children to engage in physical activity suited to their needs at various ages and in situations which are physically, mentally emotionally and socially wholesome; to create a wholesome attitude toward physical activity as a means of contributing to health and as a means of recreation in leisure time; to develop enough skill so that the desire for

activity will carry over into leisure time; and to develop leadership, followership, and co-operation, the qualities which encourage good citizenship.

The physical education program includes:

1. **Free Activity**, with attention to constantly increasing skill, using such apparatus as large building blocks, movable toys, such as engines, automobiles, carts, wagons, velocipedes, kiddy cars, etc., housekeeping equipment, tools, work benches, swings, teeters, horizontal bars, sand boxes, jumping ropes, mats, pitching targets, jump standards and pits, quoits, bowling outfits, tether poles, climbing ropes, and balls of various kinds. In a few schools such apparatus as parallel bars, bucks, booms, stall bars, etc., are provided. The free activity programs vary according to age.
2. Games suited to the season, simple in organization in the early elementary grades, but calling for increasing skill and co-operation in the later elementary grades and junior and senior high schools.
3. Rhythmic play, including natural rhythms, singing games, folk dancing, clogging, etc.
4. Stunts and other self testing activities.
5. Athletics—running, jumping and throwing events (grades 5-12).

The squad system is well developed and much attention is given to pupil leadership, followership and co-operation. Pupil leadership in the early elementary grades is simple, but there is a steady gain in the ability to lead, follow and co-operate as the pupils grow older. In the third and fourth grades the children act as game leaders. In grades five and six they are able, in addition, to act as team captains and referees. In junior and senior high schools the activities are practically all under the leadership of pupils. By this arrangement, the teachers are able to devote their time to teaching and coaching, going from group to group.

Intra school competition is emphasized for both boys and girls from grade five through the high school. Every boy and every girl belongs to a team. Each season tournaments are conducted both within physical education classes and between home rooms. Boys from grade six through the junior high school have, in addition, a limited number of inter-school games within the city, and the senior high boys have inter-city competition in football, basketball and in field and track events. The team games used for intra school competition include, for boys, soccer, speedball, volley ball, basketball and baseball, and for girls, schlag, baseball, newcomb, field ball, volley ball, and basketball. Throughout the year, simple intra school meets are held, using athletic events and stunts. Each spring an inter-school track and field meet is held for the boys of grades 5, 6, 7, 8 and 9.

Physical Education has a generous time allotment. From kindergarten through the fourth grade, two half-hour periods daily are devoted to Physical Education; in grades five and six, one half-hour period daily, supplemented by after school play, is allowed; and in junior and senior high schools, one hour daily is provided.

In the early elementary department (kindergarten, grades 1 and 2), health and physical education are very closely inter-woven with the general educational procedure, and the work is entirely in charge of the home room teachers, assisted and advised by the early elementary supervisor and the Physical Education supervisor.

In the later elementary department (grades 3, 4, 5 and 6), and in the junior and senior high schools, Physical Education work is conducted entirely by trained Physical Education teachers. Boys and girls are taught in the same classes through the fourth grade, but in grades five through twelve the boys and girls are separated for Physical Education. Women teachers are in charge of both boys and girls through the sixth grade, and of girls in junior and senior high schools. Men teachers, under the supervision of a man, are provided for the boys of junior and senior high schools.

At present there are in the department twenty women and nine men. Ten of the women and three of the men have either A. B. or B. S. degrees. The majority of the others have had at least three years of training beyond high school, and none have had less than two years of special training. Salaries are based upon training, experience and ability, and are the same for teachers in all departments.

At the present time the Kalamazoo schools are engaged in a general curriculum revision. One phase of this work is a health survey which is being conducted by committees of principals, supervisors, teachers, janitors, and parents. An effort is being made to study the various factors which make up the health program, with a view to making it more efficient as the curriculum is re-organized. The following studies have been planned:

1. Environment
2. Personnel
3. Health Examinations
4. Health Protection
5. Health Records
6. Follow up Work
7. Curriculum from the Health Standpoint

(*Concluded on page* 43)

The PENTATHLON

Vol. I January, 1929 No. 4

Health - Play
Physical Education
Athletics - Leisure

Journal of
THE MIDDLE WEST SOCIETY OF PHYSICAL EDUCATION
Published at ANN ARBOR, MICHIGAN
E. D. MITCHELL, *Editor*

AN EDITORIAL BY THE PRESIDENT OF THE "MID-WEST"—L. M. POST

From the reports of chairmen of the various sections of the Mid-West Society of Physical Education it would appear even to the casual observer that there is a real effort on the part of several to build up a strong and influential section.

In the last analysis, all that any organization of this kind amounts to is the sum of its sections.

To hold a convention, to have a few speakers of national reputation, is a laudable effort, but the real intrinsic value is work done in section meetings and the welding of those of one group into a strong, unified constructive force.

A convention, a magazine, or an organization is not a one-man job or a small group job. If the affairs of the "Mid-West" had to be conducted from a one-man or a small group point of view it would not be worth while. I want to determine at the end of the year whether a few of us want to promote and organize or whether there is a real honest desire on the part of a large enough group to have a live, constructive society for the furtherance of Health and Physical Education in the Middle West. If the first premise is true, let's wrap a shroud around the remains, scatter a few flowers, and lay it away.

I hope the real desire of a larger group exists and that no accusing finger can ever be pointed at the teachers of physical education in the Middle Western States and say, "You have passed up an opportunity for service."

It is a tremendous task to run a magazine during the first year. Advertisers want to be shown that it is permanent. The combined effort of the chairmen and secretaries of all the sections will do a lot to help put it across.

Membership in the "Mid-West" has increased from less than one thousand to more than two thousand in eight months. All together for another thousand! You are getting more for your "Mid-West" dollar than ever before. What are you going to do about it?

The next convention is to be held at Chicago in April, with headquarters at the Morrison Hotel. ON TO CHICAGO, APRIL 24 TO 27!

ACKNOWLEDGEMENTS

Many friendly letters have come to the Pentathlon since its first issue this fall. These have expressed approval of the type of articles being featured and have wished our new venture a successful future. Many have also offered interesting suggestions which can be used in future issues. To those of our readers who have asked for book reviews and for news notes we wish to say that we will start including these features in our February number.

The Editor would like nothing better than to send a personal answer to each of these letters, and regrets indeed that he is unable to do so. As can be expected, however, the work connected with starting a new magazine is so heavy that all his available time is needed to make it a success. Consequently, this general acknowledgement through the editorial column is his only recourse to let the friends of the new Mid-West magazine realize that he appreciates greatly their expressions of good will. He can assure you that such encouragement helps to make the officers of the Mid-West Association feel encouraged in their efforts to build up the society and to establish for the profession a semi-popular journal like the Pentathlon.

In this connection the Editor wishes to state that his request in the November issue has brought forth a number of good articles from our readers. These will provide interesting reading in future issues. There will always be need for good articles, however, so do not hesitate to write up your successful ideas and send them in. We want them.

We conclude by repeating that suggestions from readers are always welcome and are helpful in shaping the future policies of the magazine.

Play Days Versus Interscholastic Competition

HELEN N. SMITH

Head, Department of Physical Education for Women, University of Cincinnati

FOR years women who have been in close contact with girls' and women's athletics have endeavored to find a substitute for interscholastic activities that would overcome its evils and yet equal in every respect its desirable qualities. Those advocates of interscholastic competition point out that it is desirable to develop in girls, sportsmanship, loyalty, co-operation, initiative, quick response, and a love for clean, wholesome, healthful activity, and to give them such opportunity for social contact as occurs when one team visits another. Who does not believe that these are most desirable qualities, and if interscholastic competition really satisfied these ideals we would have little to say against it today.

Follow for a minute the growth of girls' and women's athletics: Girls' athletics developed naturally from men's athletics. With their new freedom, girls began to ask why they also were not permitted to play games. The answer came back that there really did not seem any reason why girls should not play games and thus the program began. Unfortunately, though, in the schools at that time there were only men coaches, and naturally when the question of girls' teams came up, the man was asked to take charge of them. He looked at things from a man's viewpoint, was ignorant of a girl's capacities and limitations, and more than that, was for the most part uninterested. Then in small towns the Chamber of Commerce found that a girl's team was rather a novelty. Here was a chance to make the town known, here was a chance to draw record crowds, to make money. Therefore the girls' teams were commercialized, a few girls were selected and coached to win games. All thoughts of play as recreation were forgotten, all thoughts of health were thrown to the winds, all values of play were obliterated.

It is such conditions as these that women have faced and are facing in many parts of the country and against which they have risen in arms. Today women throughout the country are working towards very different goals in girls' and women's athletics. They are not thinking of producing star performers, winning teams, and Olympic athletes, but rather of giving the opportunity for play and recreation to every girl. Realizing the tremendous benefits obtainable from clean, wholesome competition, they have asked why should not every girl have such opportunities? Why should only a few be given a physical, moral, and social training that all should have? The answer has been that there should be equal opportunity for every girl to participate in activities from which such qualities are derived.

The Play Day has been advanced as the answer to the problem of girls' and women's athletics. It is in its infancy and still has tremendous possibilities for growth.

What is a Play Day? A "Play Day" is the coming together of two or more schools for the athletic activity where competition is based on some arbitrary chosen division and not on the school-against-school system. One school invites other schools within a nearby radius to send a definite number of girls to its home grounds. These girls are divided by lot into teams that take part in the various games. Teams adopt the names of colors and are known throughout the day as the "reds," "blues," "yellows," etc. In this way there is an equal number from each school on every team.

Emphasis is placed on "Play for play's sake." There is spontaneous fun which is unspoiled by the tension of an over-excited audience and an overstimulated team. As soon as the activities get under way, teams develop a natural group loyalty. This loyalty provides incentive for team spirit, making success desirable and the giving of one's best for the team essential. It is wholesome competition with a friendly, genuine play spirit back of it.

In organizing and conducting a Play Day, there are certain basic standards to be considered. They are as follows:

1. The activities chosen must be those which give to everyone an equal chance to play. The games chosen must be within the playing ability of all the girls. All participants should have equal opportunity to indulge in the Play Day activities.

2. The activities chosen must be activities which are interesting and enjoyable to those participating. Find out which games are

most popular and start with them. Then enlarge by adding games with similar elements but greater variety. Include some mass games for all, such as cage ball, or dodge ball; and some games which require a certain amount of skill and practice, such as basket ball or volley ball. There should be opportunity for "individual challenges." This means that a girl of one color team may challenge a girl from another color team to compete with her in any of the suggested activities listed on the program such as stunts, hop-scotch, quoits.

3. There must be opportunity for wholesome social contact. While there is a great deal of opportunity for social contact through the play activities, it is desirable to plan some such event as a luncheon or dinner, a picnic or campfire supper when all may get together.

4. Play Day activities should be an outgrowth of the physical education and health programs. The different activities of the Play Day should be those which may be practiced and planned for in the regular physical education periods. Thus the Play Day program often provides the stimulus for variation and development of the physical education program in the school. In this way new and interesting games are introduced, thus guarding against possible overemphasis and overdevelopment of one game, such as basket ball. A well planned Play Day system requires a background of health and physical

education activities in the school, and the cooperation of those in charge of them. If such a program does not exist at the time, the Play Day may be the medium of introducing and giving interest to it.

5. A health certificate should be required of every participant.

6. Care must be taken in the organization and operation of each separate Play Day. All details of the program and the actual technique of operation must be carefully considered and planned.*

*Note: "Play Days," Smith and Coops. A. S. Barnes Co., publisher.

The following program is one that has been used by the University of Cincinnati in entertaining the girls of the city high schools.

HIGH SCHOOL PLAY DAY

General Plan: Members from each school are equally distributed into six groups:

1. Red
2. Green
3. Yellow
4. Tan
5. Lavender
6. Blue

Leader—Ruth Layne
" Helen Chapman
" Louise Kennedy
" Dorothy Davies
" Hazel Heintz
" Grace Tauber

Day's Order:

Activities: Baseball, cageball, relays, folk-dancing, and swimming.

Novelties: The "challenge system" is used for novelties. Any girl may challenge any member of another color team to any form of individual competition, not necessarily on the list.

Suggested List:

1. Stunts—Indian wrestle
2. Baseball—Accuracy throw
3. Basketball—Distance throw
4. Dashes
5. Hop-scotch
6. Quoits
7. Jacks

Tentative Time Schedule:

12:00-12:40—Registration and assembly in the gymnasium
12:45- 1:40—Folk Dancing
1:45- 2:30—(1-4) Baseball, (2-5) Cageball, (3-6) Relays
2:30- 3:15—(3-5) Baseball, (1-6) Cageball, (2-4) Relays
3:15- 4:00—(2-6) Baseball, (3-4) Cageball, (1-5) Relays
4:00- 5:00—Posture Parade and "Ask me another"
5:00- 6:00—Swimming
6:00- 7:00—Picnic Supper

Scoring System:

5 points for winner of team
1 point for individual winner of challenge

Notice: All equipment for novelty challenges may be secured at the Equipment Desk in the Women's Gymnasium.

In comparing Play Days and interscholastic competition, we find that the Play Day has all the advantages of interscholastic competition without the disadvantages. These are outlined in the following chart of contrasted values:

INTERSCHOLASTIC	PLAY DAY
1. Audience—Over-excited crowd urging teams to win.	1. No audience, thus inspiring the true play spirit.
2. Play opportunity. Limited to the few girls who make the team.	2. Play Opportunity. For the many.
3. Overtraining of the "star" athletes and ignoring the average.	3. Activities selected so that all may participate.
4. Social contacts for the few. Sportsmanship often lost in "hair-pulling" episodes. Intense school spirit.	4. Social contact for all. Sportsmanship of highest quality. Learning to take one's place in a group or community.
5. Quality of sport. Highly developed team play, often lost in the nervous excitement of a game.	5. Quality of sport. Good team play where the Play Day activities have been correlated with the program of physical education. Girls knowing technique of organized games and the elements of team play develop a high quality of sport.

The types of Play Days are many and varied. And there is room for great improvement in all that have been conducted. An interesting type of Play Day is the one that was held last November 24th between three colleges in Ohio,—University of Cincinnati, Miami University and Western College for Women. Three Play Days have been planned

for the year,—one at the end of each term, thus following up the activities and programs of the schools concerned. The fall one was held at Miami University. Girls from Western College and the University of Cincinnati traveled there several hundred strong to spend the day in games and contests for which they had been practicing during the fall term. It is far better for these two or three hundred girls to have the benefits of such contests than for a team of eight or ten girls from each school.

The possibilities for expansion of Play Days are enormous. One can see whole schools, colleges and universities travelling to other schools, colleges and universities to

(*Concluded on page* 44)

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The Zone Defense in Basket Ball

DR. FORREST C. ALLEN

Director of Physical Education and Athletics, University of Kansas

ZONE or man-to-man defense? Which? This discussion has become so general that a few words of explanation will not be out of order.

Zoning the defense merely means placing the defense constantly and consistently between the basket and the offense. This zoning problem causes too much worry.

To the coach who is coaching or has coached man-to-man basketball, I would advise him to use all of his previous knowledge and add to this the *elastic band method* of defense. This system implies that there should be correct and carefully timed shifting of the defensive players. These conjointed movements of such a defense in action look very much as if the players were encompassed by an elastic band which is pulled with each shifting movement of the defense into a lopsided formation. A more detailed discussion of this elastic band defense follows: The defensive men always take the positions on the floor indicated by the squares on the diagram. Assume that a heavy elastic band—the tension of which, with certain reservations to meet emergencies, is always a constant—is drawn around the five players. Assume, further, that each player is fastened to this band so that he cannot roll or slip along it. Now, when one player moves, the resultant direction of the others is fixed. Regardless of the place at which the offense thrusts, the defense moves conjointly and simultaneously to meet it.

This defensive band, swaying back and forth as the tide of offense surges against it, then receding and surging again, is not unlike the children's game of "Bull in the Pen," wherein the circle, formed by the children interlocking their hands, sways and changes as the player (the bull) on the inside of the ring tries to break through to get the man who is, according to the rules of the game, stationed outside the ring.

In order to continue the discussion of such a defense further, assume for the moment that diagram one is a typical offensive formation. In such a case, let us also assume that the ball has been passed from the other end of the court and worked to the new position shown for x5, which is in front of and to the right of the defense. Players x2 and x1 have reached the positions shown, just as x5 reaches his new position with the ball. The defensive forward, □2, follows the two offensive players, x1 and x2, to the rear of his zone. The defensive guard, □5, moves back with x2. This movement draws the other defensive players, □3, □4, and □1, in the directions indicated by the solid lines.

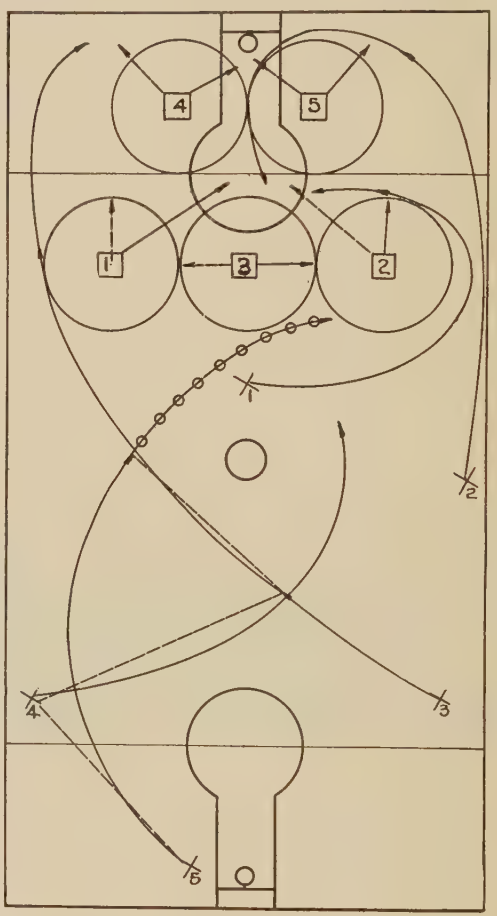

Diagram 1

The position of the ball is always considered the strength of the offense, and all players move in its direction. □3 is in a position to harrass the player with the ball. □2 can cover x1, and □5 can cover x2. X3, after passing the ball to x5, moves to one of the positions on the court shown by the arrows. Because of the distance of x3 from the player with the ball and because of the direction that the pass must take with respect to the

defensive players □1 and □3, a pass to x3 may be easily intercepted; therefore, he is not a dangerous opponent in his present position.

Now, if x1 should continue in the course shown, □2 would follow him to the edge of his zone, where □1 would pick him up and follow him while he was in this zone. Then, should x2 continue across the court to a position under the basket, where he would suddenly dash to a spot behind the original position of x3, he would be followed by □5, and □2, who has remained at the back of his zone, could cover him. Thereafter, □5 would again drop back to his original position. If x3 should continue around behind or on past □4, he would be followed by this guard until he left the zone. If the point of attack suddenly should be changed by a pivot and a pass back from x5 to x4, the direction of the defense would be reversed, as shown by the dashed lines with arrows.

By the use of movements similar to the foregoing, any offensive situation can be met and usually mastered. But the defense, in executing such plays, must remember to move so that it is always balanced and ready to change its direction, to feint and jockey the opponents, and to worry the player with the ball. A good defensive man knows just when to thrust out his arms and yell, or to slap his feet to the floor and feint an attack. By perfecting all guarding fundamentals, by employing every legitimate guarding trick, and by mastering every defensive movement of team play, any present-day defense can make it very difficult for an offense, no matter how brilliant, to succeed in getting enough baskets for a winning score. A heady, determined team playing a five-man defense can so bewilder an offense that it can, almost without exception, turn the tide of victory.

However, this zoning method of defense is very difficult for novices to execute. It requires much team experience, and is very unlike the man-to-man variation of the five-man defense, which requires less team training to play it. Players cannot be thrown together in this zoning method and be expected to work smoothly at first. They must accustom themselves to their surroundings and to one another. Developing defensive players to the point where they can so feel their surroundings that they move as if tied together is indeed tedious work. Success in such work can be attained only by diligent and repeated practice of setting the defensive men in their positions and giving the ball to an offensive five which will try by fair means to penetrate, to pass over, or to shoot over, the defense. We will now turn to the offensive play for a moment.

A versatile offensive play on the part of x5 would be a hook pass to x2. With x5

Diagram 2

standing in front of □2 and □3, x5, by turning on the toes of his left foot and by jumping high into the air and hooking passing high over his own left shoulder, can float the ball over these two defensive men into the outstretched arms of x2 or x3, who come rushing in around the free-throw line.

Diagram No. 3 shows the hook passer alighting in proper fashion. As soon as x5

Diagram 3

alights he darts quickly to a position around and behind □2. A quick return of the pass from x2 to x5 can easily be made. The bas-

(*Concluded on page* 47)

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Building the Party

A. E. GENTER

Director of Recreation, Pontiac, Michigan

SINCE January 1st, 1926, the Department of Recreation of Pontiac has furnished leadership and planned 152 parties, with an aggregate attendance of 13,535 people. We have planned parties for church groups, city employees, school teachers, industries, Parent-Teachers Associations, private homes and all types of groups. In fact, Social Recreation plays a very large part in our winter program.

Building a party is very much similar to building a house. A general plan is a prerequisite of both. In the plan for your house, you place the heating plant in the cellar and all of the other parts have a definite relationship to each other.

Experience in planning parties has shown that programs are usually built in the following manner:

1. Pre-party games
2. Get-acquainted games
3. Mixers
4. Active games
5. Passive games
6. Active games
7. Passive games
8. Conclusion with a bang
9. Refreshments.

The successful party usually takes care of the early arrivals and has something for them to do until the majority of the group arrive. The pre-party game also does not allow the edge of self-consciousness, which spoils so many parties, to develop. After the majority of the guests have arrived, it becomes necessary to acquaint them with one another. This may be done by the formal introduction or by games. Following this, it is usually desirable to mix the party thoroughly and thus prevent the formation of clique groups.

When the group has become thoroughly mixed, they are ready for alternate active and passive games. These games should be, especially in the early evening, of the type everyone of the group can play. The weaving in of passive games will give the group a chance to get its breath and make the program more enjoyable.

It is well to close the program when it has reached the highest interest point. This will send the group away with a happy social feeling and a desire to attend the next meeting to get more fun.

GENERAL HINTS IN PLANNING THE PARTY

1. Start on time.
2. Close on time. Send the group away wanting more.
3. Plan your parties for everyone.
4. Plan your party around a central theme, i. e., Baby Party, Penny Social, Backward Party, Circus, Radio Night.
5. Have a welcoming committee to assist you to get the group started.
6. Plan a balanced program.
7. If you have side shows or booths, arrange your program so that the games go on either before or after the people have had a chance to visit the other attractions.
8. Know what you are going to do before you start to do it.
9. Get the attention of the entire group before you start to speak. Take a position where you can see everyone (not in the center of the circle, as your back would be to part of the crowd). Talk slowly in a friendly tone, giving simple directions.
10. Use the interest of humor to command the group. But never make one person the "goat."
11. Note fatigue and embarrassment of any persons. Replace them with tact.
12. Interpret rules of games liberally.
13. Change a game at the high interest point. Don't play it to death.
14. If a game doesn't go over with one group, switch to another game without comment and analyze afterwards.
15. Have a list of games on small cards so that you can choose one at a moment's notice.

We find that in planning party programs you have to adapt yourself largely to the mood of the group and the size of the room in which the meeting is held, together with the age of the participants. Hence, we find it advisable to lay out a program in advance and carry some 150 to 200 games on small cards with us, which we can adapt to suit the needs of the occasion.

The following programs will give you an idea of an actual get-acquainted party for between 50 and 100, or more, adults:

GET ACQUAINTED PARTY PROGRAM

For 50 to 100 or More Adults

1. Pre-Party — Get Acquainted Game — Reception Line. 15 Min.
2. Mixer—Grand March—25 Min.
   a. Down in Couples
   b. Down in fours
   c. Three right—one left

d. One right—three left
e. Two right—two left
f. Right side over—left side under
g. Right side under—left side under
h. Over and under
i. Down in fours
j. Down in eights
k. Down in sixteens

3. Active—Snake into a large circle. 5 Min.
4. Semi-active—Silas and Mirandy. 15 Min.
5. Active—Come Along. 10 min.
6. Passive—Spell Down. 10 min.
7. Conclusion—Hello-Goodbye. 10 min.
8. Refreshments.

DESCRIPTION OF GAMES

Reception Line: The welcoming committee stands in line at the entrance. As each guest enters, he is introduced by the first member in the line to the second and so on until he reaches the end of the line, where he becomes a part of the line and meets the new guests as they arrive.

Grand March: Ladies go to one side of room and gentlemen to the other. Each side marches in single file to the back of the room and come down in couples. Couples divide right and left at the front of the room, march to the back and come down in fours. At the front of the room, the fours divide, three going right and one left, and come down in fours. This time one goes right and three left and down in fours. Two go to the right and two to the left and hold positions at the back of the room. The couples on the right side make an arch with the inside hands, and the couples on the left side pass through the arch. Repeat with the left side making the arch. When the two lines of couples meet again, the first couple on the right side goes over the first couple on the left side and under the second couple. Both lines continue marching, going alternately under and over. When the couples meet at the back of the room, they come down in fours. Four go right and four left and down in eights. Alternately left and right eights and down in sixteens, where they halt facing the leader.

Snake into a Circle: Each sixteen of the above formation joins hands across the file and the leader goes to the right end of the line and leads a snake in and out among the sixteens into a large circle. The first person of each sixteen joins hands with the last person of the snake as it passes by.

Silas and Mirandy: Players join hands in a circle. The leader picks a young man to act as Silas and a young lady to act as Mirandy. The young man is blindfolded. The young man calls out "Where are you, Mirandy?" The young lady replies "Here I am, Silas." Silas chases Mirandy until he catches her, then Silas chooses a new Mirandy and Mirandy chooses a new Silas and the game continues.

The leader chooses the six good looking women to represent the ladies and the six popular men to represent the male sex. Each team lines up in the center of the room facing the other team. The leader has prepared in advance a list of words containing the letters "a" and "t." The leader designates a player and calls a word from his list. The player spells the word but instead of saying the letter "a" he raises his right hand to the height of his ear and brings it back to his side. In place of the letter "t" he uses his left hand in the same manner. For example, the word "cattle"—C-(r)-(l)-(l)-l-e.

Suggested words are Atlanta, tattle, chatter, sweater, attention, quaint, battle, attitude, team, attempt, Saturday.

Hello-Goodbye: Circle formation. The leader chooses a couple and instructs them to say "Hello" and skip around the circle until the music stops. When the music stops, they say "Goodbye" to their partner and get a new partner, whom they greet "Hello." This continues until everyone is on the floor.

SOURCES AND MATERIALS OF SOCIAL RECREATION

1. Recreation Department has the following:
   Party-A-Month Club Bulletin
   Playground and Recreation Association Bulletins
   Social Recreation Quarterly Bulletins
   Playground Magazine
   Dennison's Party Magazine
   Handy Kit
   Getting Together, by Edna Geister, Geo. H. Doran, N. Y.
   Ice-Breakers, by Edna Geister, Geo. H. Doran, N. Y.
   Phunology, by E. O. Harbin, Cokesbury Press, Nashville, Tenn.
   The Book of Games and Parties, Theresa Hunt Wolcot, Dodd Mead Co.
   Sing Song Stunts, by Dorothy Potter Eldredge, Entertainment House
   Games and Recreation Methods, by Charles F. Smith, Dodd Mead Co.
   A Book of Original Parties, by Ethel Owen, Abingdon Press
   Parties That Are Different, by Ethel Owen, Abingdon Press
   Games for Every Day, Elliot and Forbush, the MacMillan Co
   Games for Playground, Home, School and Gymnasium, Jessie H. Bancroft
   A Year of Recreation, by Ethel Owen, Abingdon Press
   Friendly Frolics, by Osa Lent Dunbar, Methodist Book Concern
   A Year of Special Parties, Harold Case
   Recreational Games and Programs, by John Martin, P. R. A. A.
2. Other Sources:
   Playground and Recreation Association, 315 Fourth Ave., N. Y. C.
   Lynn Rohrbough, Church Recreation, 510 Wellinton Ave., Chicago
   Dennison's Party Magazine
   Detroit Free Press, Alice Hathaway Column, Sunday Edition, Social section
3. Pontiac City Library (Games—Parties):
   Bancroft, J. H.—Games for the Playground, Home, School and Gymnasium
   Burt, E. R.—Planning Your Party; The Shower Book
   Clark, Imogen—Suppose We Do Something Else
   Dawson, Mary—Mary Dawson Game Book
   Dayton, H. S., and Barratt, L. B.—Book of Entertainments and Theatricals
   Degenhardt, F. V.—Shows and Stunts
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   Dunlavy, T. M., and Boyd, N. L.—Old Square Dances of America
   Elsom, J. C. and Trilling, B. M.—Social Games and Group Dances
   Finn, E. M.—Songs, Shouts, Stunts
   Geister, Edna—Ice-Breakers and the Ice-Breaker Herself
   Glover, E. H.—"Dame Courtesy's" Book of Party Pastimes

(*Concluded on page* 44)

Natural Activities on Apparatus

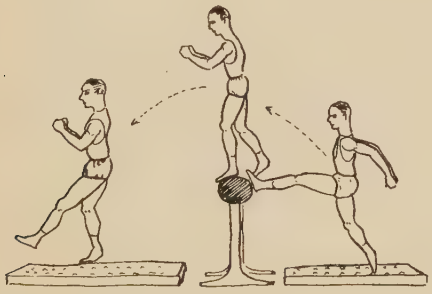
J. H. McCULLOCH

Professor of Physical Education, Michigan State Normal College, Ypsilanti, Michigan

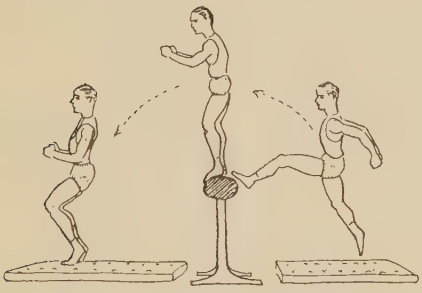
(Continued from December Issue)

EXERCISES ON THE SIDE HORSE—SERIES I

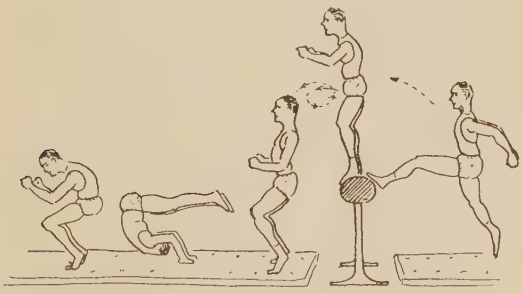
1. (a) Approach. Run and take off left foot.
   (b) Mount. Leap to standing position in saddle on right foot.
   (c) Dismount. Leap to mat.
   (A leap is taking off one foot and landing on opposite one.)
2. Repeat with R foot.



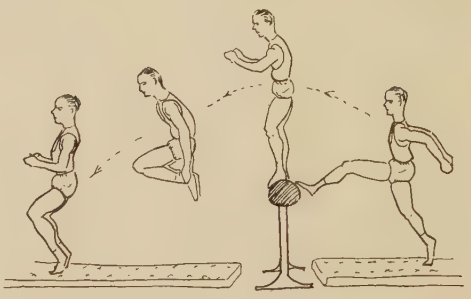
3. (a) Approach. Run, take off either foot.
   (b) Mount. Jump to standing position in saddle.
   (c) Dismount. Jump forward to mat.
   (A jump is taking off one or both feet, landing on both feet.)



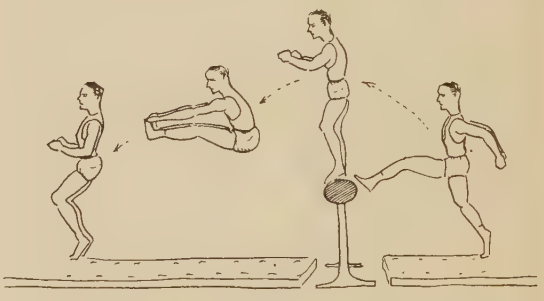
4. Repeat 3. (a) Approach. (b) Mount. (c) Dismount. Jump to mat and do forward roll.



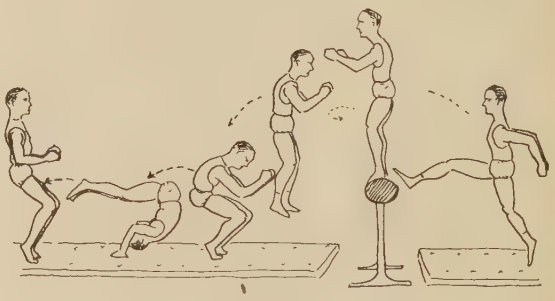
5. Repeat 3. (a) Approach. (b) Mount. (c) Dismount. Jump to mat flexing legs and touching heels with hands.



6. Repeat 3. (a) Approach. (b) Mount. (c) Dismount. Jump to mat and flex thighs, touching toes.

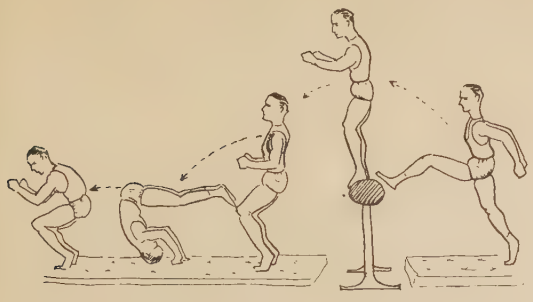


7. Repeat 3. (a) Approach. (b) Mount. (c) Dismount. Jump to mat with following variations:
   1. With quarter turn R, with and without cartwheels.
   2. With quarter turn L, with and without cartwheels.
   3. With half turn R, with and without backward roll on mat.
   4. With half turn L, with and without backward roll on mat.



   5. With three-quarter turn R.
   6. With three-quarter turn L.
   7. With R turn, with and without front dive.

8. With L turn, with and without front dive.

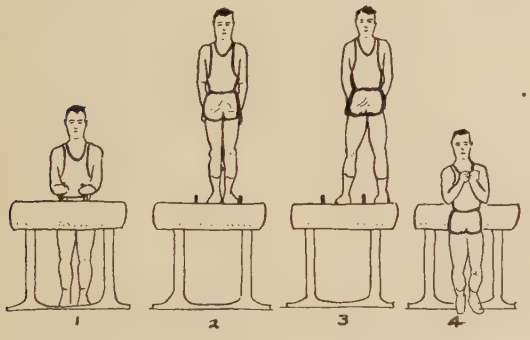


The foregoing exercises, except three-quarter and full turns, may be executed by three boys at a time, having one jump on neck, one in saddle, and one on croup.

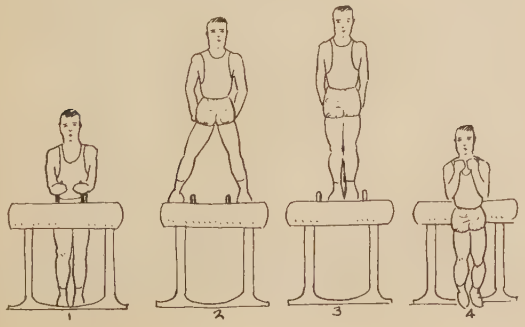
A vault is a movement in which the arms are used in aiding the body on or over the apparatus. In vaulting head and chest should be elevated to maintain the balance and keep from pitching forward and downward.

THE SIDE HORSE—SERIES II

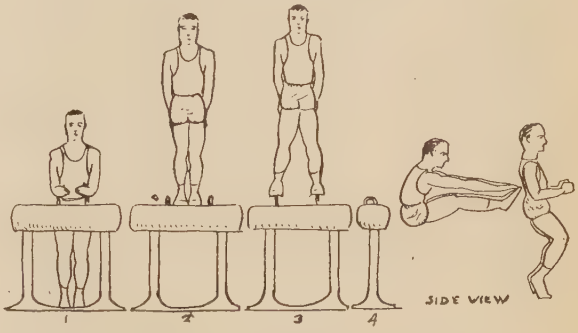
1. (a) Approach. Run and grasp pommels.
   (b) Mount. Vault to standing position in saddle, thrusting body upwards with arms.
   (c) Jump to stride stand (one foot on neck and one foot on croup).
   (d) Dismount. Jump to mat.
      1. With quarter turn R or L.
      2. With half turn R or L.
      3. With three-quarter turn R or L.
      4. With full turn R or L.



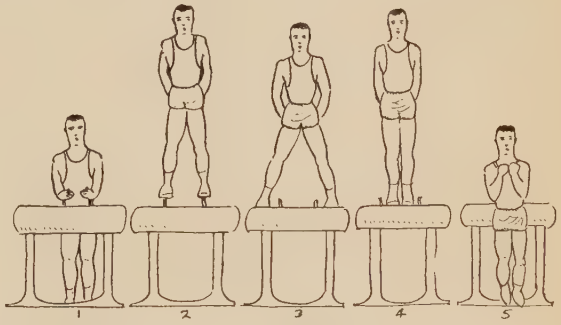
2. (a) Approach. Run and grasp pommels.
   (b) Mount. Vault to stride stand.
   (c) Jump to stand in saddle.



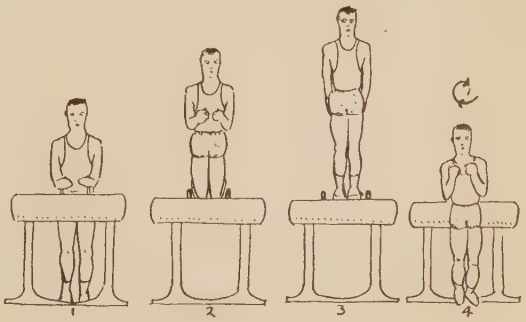
   (d) Dismount. Jump to mat.
      1. With quarter turn R or L.
      2. With half turn R or L.
      3. With three-quarter turn R or L.
      4. With full turn R or L.
3. (a) Approach. Run and grasp pommels.
   (b) Mount. Vault to stand in saddle.
   (c) Jump to stand on pommels. In doing this toes should be turned out and weight placed on the ball of the foot.
   (d) Dismount. Jump to mat, flexing legs and touching toes. You may vary with any of preceding dismounts.



4. (a) Approach. Run and grasp pommels.
   (b) Mount. Vault to stand on the pommels.
   (c) Jump to a stride stand position.
   (d) Jump to a stand in saddle.
   (e) Dismount. Jump to mat, flexing the thighs and touching toes. You may vary the dismount with any of the preceding.



5. (a) Approach. Stand grasping pommels.
   (b) Mount. Vault to knee leaning rest.
   (c) Jump to stand in saddle. Flex the arms and snap them down vigorously to aid in the jump.
   (d) Dismount. Jump to mat with full turn R or L, and do front dive.



(*Concluded on page* 45)

The Locker Room and Its Care

CARL R. CHRISTY

Department of Physical Education, Eastern High School, Detroit, Michigan

OF THE seven objectives of secondary education, Health is usually placed first. This being the case, it is of prime importance in teaching it that the surroundings and equipment shall be as nearly ideal as possible.

The locker room is by no means of least importance in considering a health unit. There are at present three main types of these rooms.

1. Check-room Plan. Each member's gymnasium clothes are stored in a wire basket and stacked on a series of shelves in a drying room. Each class on entering the locker room goes to the carriage containing the baskets in which are the individual's clothes, towel, and lock. The basket is taken from the rack and carried to one of the large individual lockers. After one exercises, the gymnasium clothes are placed in the basket and returned to the carriage. The locker attendant then runs the carriage into the drying room. By this method the clothes are always dry and ready for use each day. This plan requires a small locker room but a large drying room.

2. Regular Type. This is the oldest and probably the largest type. It means simply a permanent individual locker for each person using the privileges of the health department. Such lockers may be equipped with any type of lock which best serves the particular requirements.

3. Self Service or Section Locker System. This being the type most used in Detroit schools, will form the basis of the following discussion. The system is composed of eight or ten small lockers, size 8x12x26 inches. For each section of small lockers there is one large one, size 12x12x52 inches. The student is assigned a small locker in which to keep his gymnasium clothes, the large locker being used only during class time for street clothes.

Size of Locker Room

1. There should be enough large lockers to accommodate the largest class at any given hour of the day.
2. The distance between rows of lockers should be four feet.
3. Aisles should be four feet wide.
4. Ceilings should be at least ten or twelve feet high.

Accessibility

1. Lockers should be on same floor as the pool, shower, and drying room.
2. The locker room should be close to the gymnasium, to avoid unnecessary drafts in passing from one to the other.

Ventilation

1. Good ventilation is essential.
2. Radiators or heating coils should be located on walls between windows or attached to the ceiling.
3. Steam risers should be well covered to a height of six feet above the floor.
4. Windows should be at least six feet above floor.
5. Nothing but tempered air at from 72 to 75 degrees should enter the room.
6. Lockers should have ventilators to force hot air through them, thus drying the clothes.
7. There should be floor ventilators to take the cold air from the room.

Floor

1. Cement is the most satisfactory material for floors.
2. All floors should be scrubbed daily, using a good disinfectant at least once a week.
3. Floors should be so laid that those portions where the lockers are to be placed stand above the general level.
4. There should be no open space between floor and locker.
5. Drains should be placed lower than the general level of the floor.
6. Waste paper baskets should be placed in the locker room and the teacher should see that the floor is kept free from paper, etc.

Showers

Types

Overhead.

Lane.

Where only one type of shower can be had, the overhead type gives better service.

1. There should be one shower to every eight boys.
2. While boys are undressing, the showers should be turned on. This saves time, as water becomes warm by the time the class is ready to enter.
3. Boys should not be allowed to run in the shower room.
4. Allow students to touch nothing but the handles of the showers.
5. The last boy out turns off all showers.

Drying Room

1. This room must be free from cold air.
2. The temperature should be about 78 degrees.
3. A numbered towel rack should be provided for each boy to hang his towel on while taking shower.

4. No boy should leave the drying room until thoroughly dry. This keeps the locker room floor dry.
5. The floor should be rinsed down after each class.
6. No street shoes should be allowed on the floor of this room.

Benches

1. These should be made of board 2 by 8 inches.
2. There should be at least 20 inches between benches and lockers.
3. The standards on which benches rest should be 16 inches high and bolted to the floor, or better, set in the cement when the floor is laid.
4. Do not allow boys to stand on benches.

Locks and Their Assignment

The type of lock used and the plan of distribution or assignment is a matter of considerable importance. All locks should be uniform as to make. This at first will seem a hardship on the student who already has a lock. Still, it is very important that the teacher, as well as the locker attendant, have either a key or combination to every lock in the room. Either type of lock, those having keys or those with combinations, is satisfactory if a good, carefully worked out system is used and considerable time is given. However, much less time and trouble is needed with combination locks. Let us assume that we are using this type.

At the first meeting of the class, students are instructed as to the kind of locks to buy and told where these can be procured. The following day, 3 by 5 inch cards printed similar to the following are distributed.

Last name First name Home-room
Hour of class.....
Locker number .....
Lock number .....
Combination..... ....

Each boy is told to fill in everything except the locker number. When cards are complete they should be collected and each boy assigned a locker, the number of which is written in the space designated on the card as "Locker number." Care should be taken in making this assignment to be sure that each boy has a large locker to himself.

One way of assigning lockers: Let us suppose we have ten small lockers for every large one. Small lockers lettered "A" should be given to students in the first hour class, "B" to second class, etc. This places one boy to each large locker, and so prevents any possibility of crowding. Let three reliable boys take charge of the locker room and as a boy presents his card he is ushered to the locker designated by his card. This makes certain that every boy places his lock on the right locker.

Should a boy change from one class to another he must bring a note from the locker attendant stating that he has changed his lock to the locker used by the class he is entering. The card for the locker he formerly used is placed on reserve and is re-issued to anyone who may later enter the class to which it belongs. Cards should be filed according to locker number and class.

Towels.

Since care of the body is one of the greatest factors in health education, it is essential to have equipment, such as towels, soap, combs, etc., easily accessible. We certainly cannot require a boy to take a shower unless he has soap and a towel to use. One way of making this compulsory is to have both on hand. The best quality of towels, bought in lots of one hundred, cost 35 cents each. Machines can be secured for vending soap at a penny a cake, likewise combs.

Care of Towels.

If a boy wishes to rent a towel he goes to the locker attendant, gives his name, locker number, and 5 cents, for which he is given a towel. The locker attendant then takes the boy's card from the "locker file" and places it in the "towel file." On the fourth day after the towel is issued, the boy's name is given to the instructor, who asks the boy to turn in his towel. When the towel is returned the card is placed back in its original file.

Towels can be laundered for 3 cents each, thus leaving a two-cent margin to apply on the original cost.

Instructor and His Duties.

1. The instructor should check the temperature of the locker room each morning.
2. He should be present in the locker room while the class is present. This prevents running, scuffling, use of profane language, etc.
3. He should see that all waste paper is put in baskets.
4. He should check boys through the showers.
5. It should be one of his duties to see that all large lockers are free between classes.
6. He should be present and check boys for cleanliness before they enter the pool.

Locker Attendant and His Duties.

1. He should be responsible for cleanliness of locker room.
2. He is at all time in charge of showers and their operation.
3. He should have the care of towels, soap and combs.
4. He should have general charge of locks and lockers.
5. He should help in the inspection of boys who are about to use the pool.

A Point System for Girls

MARJORIE L. HEATH

Supervisor, Physical Education for Girls, Royal Oak, Michigan

THERE seems to be an advantageous place for point systems in the physical education program today. Before the elimination of varsity athletics for girls in our schools, awards were automatically given for playing on a varsity team. With the advent of more intramural work, it seemed necessary to take other things into consideration. The award given would then be evidence of achievement along many lines, rather than in just one line.

In Royal Oak Senior High School we have used a point system for five years, each year making changes and adding items suggested by the girls themselves. This year the girls voted that it had reached the stage where there was an incentive for everyone to accomplish something. Following is the instruction sheet for the point system, with the card for tabulating points:

INSTRUCTION SHEET
POINT SYSTEM FOR GIRLS
Physical Education Department

Awards—

100 points lead to class numerals.

150 points lead to small block R.

200 points lead to large block R. O.

250 points allows girl to get name on Athletic Honor Scroll.

Regulations—

1. For the first two awards the girl must be eligible in at least three subjects.
2. A girl must make a D average for an R. O. and a C average for the Honor Scroll.
3. Any girl graduating in February must earn two-thirds the required number of points.
4. At least 20 points must be earned in the Health Division; 25 points under team requirements; 10 points under service, to be eligible for an R. O.

Team and Squad Work—	Points
1. Squad leader receiving A grade in work from instructor and squad	5
2. Squad leader receiving B grade as above	3
3. Captain of class team (efficiently done)	15
4. Member of class team—basketball, hockey, tennis, baseball, field ball	10
5. Playing in a tennis tournament or archery contest	5
6. Winning tennis tournament in high school	10
7. Being on 100 per cent squad for the semester	5
8. Being on second 100 per cent squad during the semester	3
9. Manager of class team (efficiently done)	10
10. Out for class team, but not making it	5
11. Actively participating as a member of four class teams a year	10
12. Making all-class team in any sport	15
13. Making reserve all-class team in any sport	10
Individual Work—	
14. Making 15 out of possible 20 points on a non-practice test in physical education work, as soccer, dancing, stunts, basketball, etc.	5

Possible 25 points

5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 10 10 10 10 10

Individual Achievement

5 5 5 5 5 5 5 5 5 10 10 10 10 10

Service

Name.....Grade.....

ROYAL OAK SENIOR HIGH SCHOOL

Point System for Girls

Awards	Requirements - R. O.
100 points - Class Numerals	1. Academic Eligibility
150 points - Block R	2. 20 points - Health Division
200 points - Block R. O.	3. 25 points - Team and Squad
250 points - Name on Athletic Honor Scroll	4. 10 points - Service

Aim - Happy Healthful Girlhood Through Wise Use of Free Time

10 10 10 10 10 5 5 5 5 5 5 5 5 5 5

Achievement in Health

Team and Squad Points

1 1 1 1 1 5 5 5 5 5 5 5 5 5 5 5 5 5 10 10 10 10 10 10 10 10

15. On repetition of the test, raise score—1 point for 2 raise—Possible 10
16. Receiving A grade in Physical Education for semester 5
17. Receiving 1 citizenship grade in Physical Education 5
18. Individual 100 per cent record for the semester 5
19. Regular attendance and participation at all swimming classes for semester 5
20. Whole-hearted participation in the swimming meets, demonstrations, play days, etc., during year 5
21. Academic achievement—
    A. For every A in academic subject for semester 5
    B. For a B average in all subjects during semester 5
22. Passing three tests in swimming during year 5
23. Passing fourth test in swimming 10
24. Passing Junior Life Saving Test 15
25. Passing Senior Life Saving Test 20
26. Attending all Splash Parties during year ... 5
27. Having earned one R. O. during preceding year, add for Honor Scroll 10

Achievement in Health—

28. Passing Health Examination without check.. 5
29. Arriving at, and keeping for semester, normal weight 5
30. Receive medical attention for defective teeth or tonsils 10
31. Being proper weight for height and age (better resistance) 5
32. Receiving A grade in Posture for the semester. This means habitual good posture—an expression of intelligence and character ... 10
33. Raising posture grade from D to C, C to B, B to A, in semester 5
34. In bed not later than 10:00 p. m. each night except one night a week. 5 points a month. possible 10.
35. Refrain from lunching between meals for five weeks 5
36. Hiking five miles (an organized hike)—sign in Physical Education office 5

Service—

37. Efficient refereeing in grade or intramural work 10
38. Leadership demonstrated during class work for a semester 10
39. Taking charge of and making worthwhile a bulletin board—5 weeks 5
40. Acting as athletic reporter for at least two issues of "The Acorn" 5
41. Getting someone interested in intramural work, so they participate 5

The items are divided into four sections, namely, Team and Squad Work, Individual Achievement, Achievement in Health, and Service. The various items are numbered from one to forty-one (1-41) inclusive on the instruction sheet. On the reverse side of the card for tabulating the same numbers are found. These numbers are checked as the girl gets her point card punched. This card is punched with a school punch to assure correct accounting.

Several items on the instruction sheet may not seem quite clear removed from the local situation. For instance, number 7, "being on the 100 per cent squad for the semester," refers to our system of checking both individuals and squads on regularity of attendance, attitude, and general appearance.

Number 14, in regard to tests, refers to our achievement tests in the various activities in the physical education program. A non-practice test is given at the beginning of the season and another at the close. The maximum number of points in each test is twenty (20).

We do not expect that this is the last thing in point systems, but we do believe that it is a step in the right direction, because it is proving more successful in operation than ever before. We shall always leave it in a flexible state because conditions change. Sports for different years vary. Tests develop, and point evaluations are often improved after trial.

In the Junior High Schools the items, though more simple and on a shorter interest-span scale, are grouped under the same headings of Team and Squad Work, Individual Achievement, Achievement in Health, and Service, so that the girls are prepared to understand the point system when they come to Senior High School.

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Developments in Football Strategy, Season 1928

GUY S. LOWMAN

Professor of Physical Education, University of Wisconsin

(Continued from December Issue)

A VERY effective formation is the man in motion play from the double wing back formation, which is particularly adaptable to double and triple passes, reverse plays, plunges into the line, and the wide lateral. It has proven to be a strong formation for all types of play, whether line plunges, end runs, or forward passes. This formation is particularly adaptable to the quick kick.

One team in the conference has been very successful in using the man in motion play with the man going wide to the side or from a stationary position out wide, coming in to drive on the end or to cut behind the defensive line for passes. One team in the conference has shown a new development in the completion of the forward pass followed by a lateral.

Quick kicks from close formations seem to be much in evidence. Wide end runs from both the close formation and the kick formation with a mass interference seem to be coming back. There has been an increased development in strong short side plays. Spread plays seem to be obsolete. There has been much improvement in regard to formations for the receiving of kick-offs and the return of kick-offs.

The forward pass has taken its place as a definite offensive play and there is no longer any fear in the use of this play on any down or on any part of the field. More passes this year have been developed off reverse plays than ever before. The running flat pass has been used very successfully by some teams, but outside of fakes into the line with the quarterback coming out to pass and passes off reverse plays, most passes have been made without any attempt at deception on the part of the passer. The pass play develops early and the passer is given sufficient protection, either by the backs or the guards, so that he is able to get his pass away with some degree of accuracy. Both long and short passes have been stressed; and there has been much jockeying or maneuvering by the eligible man to get into position for receiving the ball. The changes in the rules for 1928 which do not permit the offensive man, after having crossed the line of scrimmage, to interfere either before or after the pass has been made, have definitely eliminated the screen pass and has handicapped the offense in sending out ineligible men as decoys. The optional pass has also been practically eliminated. Some coaches, however, are still sending out ineligible men as decoys and particularly to be in position to form interference for the eligible man where the pass is completed. One school has had the courage, even, to send the whole line down as a screen, then passing to an eligible man behind the screen. On such a play, however, the ineligible men must be careful not to make contact with a defensive man who may have an opportunity to handle the ball.

The clarification on the muffed or fumbled ball has led to more handling of punts and there has been more stress placed upon the defensive backs taking care of the ends coming down so that some yardage may be gained on the return of punts.

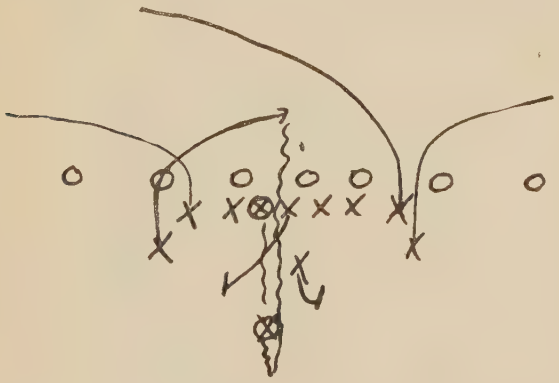

Diagram No. 5 shows a forward pass from the double wing back formation. The front back and the strong side guard block for the passer. Pass is made to the left wing back in behind the line, although the pass may be made to any one of the four points.

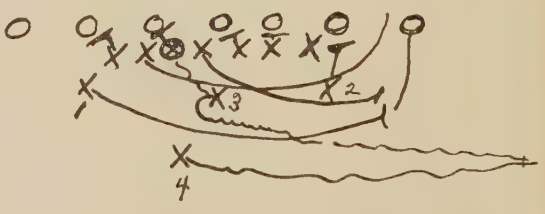

Diagram No. 6 shows the double wing back formation, the left half, or No. 1 back, in motion and the ball passed to the No. 3 back, who pivots to his left and makes a lateral pass to the No. 4 back. The strong side guard comes out and helps the No. 1 back take the defensive left end.

The individual or split interference seems to prevail, yet some teams have shown slant plays with a mass interference on tackle and also a mass interference on sweeping end runs. Guards are being brought out to lead interference on sweeping end runs and also on short end runs outside of tackle. Strong side linemen are also being brought out into the interference on short side plays. As a rule the line comes out for interference on sweeping end runs, but on close plays on tackle the weak side line usually goes through for the secondary.

The play of the line on offense is coming more and more to individual assignment work, although the wedge offense is still used under certain conditions. There seems to be more and more stress laid on the timing of the plays on the offense so as to time the defensive men out of the play. Strategy in the development of the individual offensive play and in its use is becoming more and more apparent.

A summary of the offensive play for the 1928 season shows that there has not been any outstanding development over that of last year. Of course, there have been some new developments in certain phases of the game which might be attributed to rule changes; but, in my estimation, whatever developments have been made may be attributed to the coaches in an attempt to develop certain phases of attack which have always been open for development even before the 1927 or 1928 rule changes. The 1928 season has shown merely a continued development of the possibilities toward a more open or modern game.

There have been no new developments on defense during the past season. Wherever there has been any decided change in defense over the previous season, it has been only in particular instances where a special defense has been built to meet a special type of attack.

If we should attempt to standardize the defense for 1928, generally speaking, we would say that the seven-man line has been most used. The backfield defense has been both a diamond and box formation of backs, with possibly the box defense a little more in evidence this year. Where the diamond defense is used, teams usually go into a box defense within their own twenty-yard line.

There is practically but one team in the conference that uses the six-man line defense with a 2-2-1 position of backs on all parts of the field. Some teams in meeting a certain type of attack may use the six-man line with a 2-2-1 position of backs on certain sections of the field and under certain conditions, but will go into the seven-man line as they near their own goal line. So it is quite evident that the seven-man line is still the standard defense of the line. Of course, special defenses must be developed to meet certain types of attack, and since the double wing back with the man in motion is used in offense, there has been a loosening up of the defensive line. In some instances, to meet this type of attack, the center has played two yards loose, being in position to help out on the strong side or to come back into the line on short side plays and also being in position to help out on the forward pass defense. Special defenses have been developed, too, to meet the situation of a special type of attack which uses the man in motion wide. Some teams have met this type of attack by using the six-man line defense with two men backing the middle of the line close, with the second line of backs ten to twelve yards back and slightly outside the defensive ends and with the safety twenty-five yards back. The offensive man who is out wide may be covered by the strong back and also supported by the safety man.

With the interest developed in the lateral pass last year and with the possibility of a further development of that play this year which would tend toward a more open type of play, it was expected that the six-man

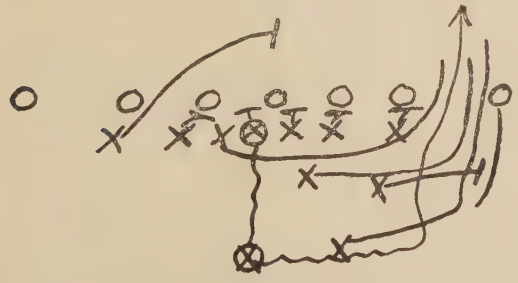

Diagram No. 7 shows a balanced line with a box formation of the backs on the right. The wing back or point half takes the defensive end and the left half carries the ball on a short end run inside the defensive end. Interference going as indicated.

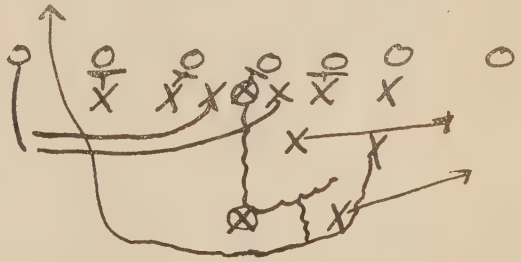

Diagram No. 8 shows the box formation on the right with a reverse play to the weak side with the guards coming out for interference.

line of defense would be used even more this year than last year. Such has not been the case. And after all, the question of the defense is, that it must be prepared to meet certain types of attack. This may be the open or closed line, the diamond or box defense of backs, or whichever type meets the situation best.

There has been no apparent change in regard to individual defensive play. As a rule, fast, straight-charging lines have been much in evidence. The type of end play has been both fast charging and waiting. The style of individual play of the line and ends is also largely determined by the type of attack that is being met; e. g., a mass type of attack on tackle or through the line would be met early and with a vicious charge or with the defensive men going under the play, while on the more open type of play out around the wings or with the man in motion, there might be some hesitancy on the part of the ends in going in too fast and on the part of the backs coming up fast to meet the play. In other words, a flanking defense would be used.

In regard to the forward pass defense, this is also a matter of building a defense to meet a special type of forward pass attack. This may be the zone, the man-to-man or a combination of both. There seems to be a tendency more and more toward the zone defense. This is supported by the fact that a large number of passes are intercepted in each game. Aggressive rushing of the passer has been more noticeable this year than ever before, which in a measure makes possible a zone defense and the interception of passes.

A standardized form of forward pass defense might be where, on a diamond defense of backs, the outside backs would be held for the long men down the field, the safety free,

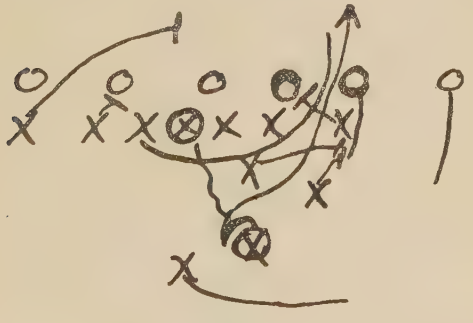

Diagram No. 9 shows the balanced line with a box formation on the right with the fullback a little nearer toward the center. Fullback receives the ball, makes a fake pivot to the back half, then goes through inside the defensive tackle on the strong side. Right end cross-blocks on guard, while the two front backs take the defensive tackle out.

and the fullback and center defending the zone back of the defensive scrimmage line, covering flat men to their respective sides. The weak side end might also cover flat on his side. Under certain conditions, or on certain downs, where the distance is such that a play is not expected through the line, the guards might also drop back and play a zone defense. With a box defense of backs, the front line of defense usually covers the flat men, while the second line of backs take the long men down. This formation may be re-

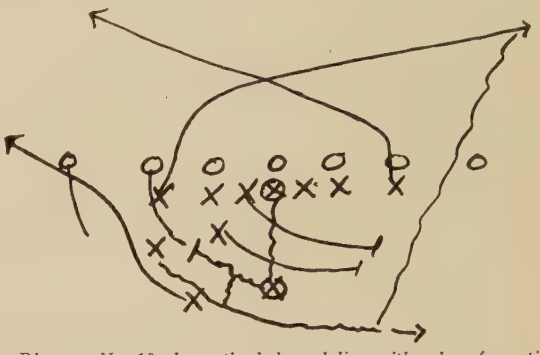

Diagram No. 10 shows the balanced line with a box formation on the left and a forward pass coming off a reverse play. The back half receives the ball, starts to his left and gives the ball to the point half who comes back to the right and passes to the long end across. The left guard and the quarterback defend for the passer as indicated.

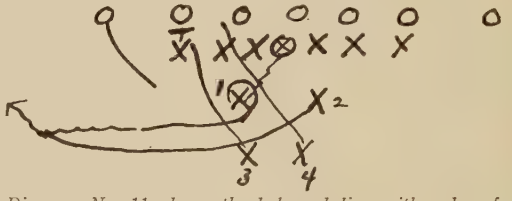

Diagram No. 11 shows the balanced line with a box formation directly back of center. The play shown from this formation is a lateral pass from No. 1 back to the No. 2 back. The No. 3 and No. 4 backs split the No. 1 back and hit the line. No. 1 back pivots to his right and lateral passes to No. 2 as the end comes in to make his tackle on No. 1.

enforced by the center dropping out and zoning back of center or to the weak side. The weak side end may also cover flat on his side. Regardless of the type of set defense used by the backfield in defending passes, rushing the passer, after all, is the best type of forward pass defense.

The 1928 season has shown a continued development of special defenses for blocking kicks. Kicks have been rushed hard, especially when the opponents were within their own territory or on the goal line. In some instances eight or nine defensive men have been on the line rushing the kicker.

As a summary of conclusions regarding defense for 1928, it might be stated that the seven-man line is still the standard defense, but that various defenses have been devel-

(*Concluded on page* 39)

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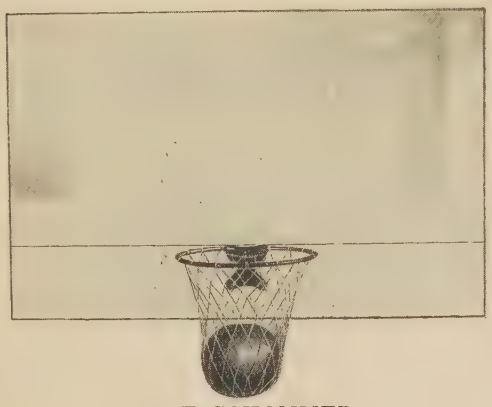

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BOOK REVIEWS

BUKH, Niels, **Fundamental Gymnastics**, translated and arranged by Emily Russel Andrews and Karen Vesterdal. 202 pages. E. P. Dutton & Company, publishers; 1928. Price $2.00.

Mr. Bukh, an originally minded Danish educator, has in the last few years developed a type of formal gymnastics that is somewhat different from the gymnastics in common use. One part of his system is called "Fundamental Gymnastics." This it should be explained is simply one part of his whole teaching method and is not the whole system. The present volume has been written by two of Mr. Bukh's students and modified and adapted for use in America by a number of leading women physical educators of this country, all of whom have studied with Mr. Bukh. In view of the different conditions existing in Denmark and in the United States this modification was wise. The manuscript was carefully read by Mr. Bukh and its appearance in English has his official presentation.

"Fundamental Gymnastics" as contrasted with the usual type of calisthenics is distinguished by several things.

1. There is a strong emphasis upon the stretching or relaxing of ligaments and muscles which either been shortened by over work or sedentary life. This is probably the element of "Fundamental Gymnastics" that is most striking to the American observer.
2. There is more emphasis upon the development of strength than has been the recent custom in America. This is largely done by calisthenics of a strenuous type.
3. There is a lack of emphasis upon uniformity and class rhythm, the individual's best rhythm being emphasised.
4. Corrective exercise is emphasized, but of a type different from the usual individual gymnastics. The great emphasis is given to the strengthening of the antagonistic muscles and to the psychological factors and less emphasis is presented upon concentric contractions.
5. The physiological dosage is larger than is usually the case. This is accomplished by alternation of muscle groups and by alternation of the use of the relaxing (and stretching) exercises with the strength exercises. This is considered to be a point of importance. Movements done by two individuals working together are frequently used, particularly to increase the dosage and to localize the effect of the exercise.

The "Fundamental Gymnastics" are preparatory to the rest of the system. When the desired relaxation and strength has been secured, more natural movements, athletics, and dancing are utilized, with just enough "Fundamental Gymnastics" to keep the needed relaxation.

For the older groups, such as older business men in the Y. M. C. A., this type of exercise should be used cautiously, as an over use of the stretching exercises may easily produce excessive lameness.

The reviewer feels that there is in this system enough that is useful to warrant a recommendation that the book be carefully studied and some of the material be experimented with. The book is so thoroughly illustrated that a careful study of its contents is relatively easy.

C. H. McCloy

Developments in Football Strategy

(*Concluded from page 36*)

oped as needed to meet special types of attack. There has been a slowing-up a little of the ends and the defensive tackles on the more open formations, due to the possibilities of a lateral pass coming off a line or running play. The backfield defense varies with the teams being met. Interception of passes and the zone defense seem to have superseded the man-to-man defense. Coaches also, under certain situations, pull defensive linemen back into the forward pass defense. There has been no general opening-up of the defense during the past season, but as mentioned above, various types of open defenses have been used to meet certain situations.

The diagrams accompanying this article show certain fundamental formations and certain types of offensive plays used during the past season.

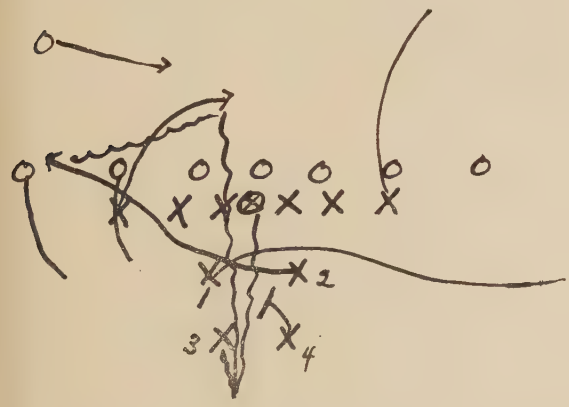

Diagram No. 12 shows the balanced line with the box formation back of center and with the No. 1 back in motion to his right. Right end goes down straight and deep. Left end hooks in behind the line and receives a high pass from No. 3. The left end is facing his line as he receives the pass, and if completed he then makes a lateral pass to the No. 2 back who has delayed and comes out to his left.

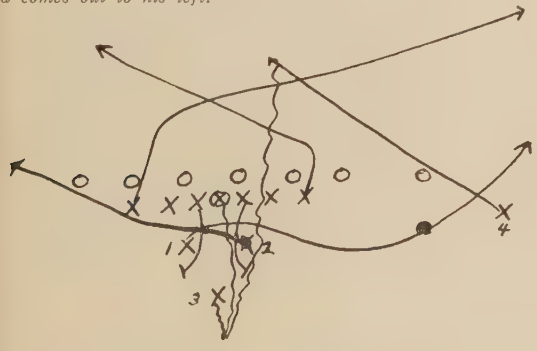

Diagram No. 13 shows the balanced line with the box back of center and with one man from the box out wide to the right and stationary. The No. 1 back is in motion, the ball is passed to the No. 3 back who forward passes as indicated or to any point open. The two guards drop back to block for the passer.

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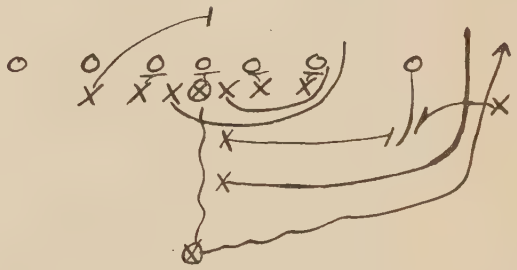

Diagram No. 14 shows a kick formation with one back wide on the right and one yard back of the line of scrimmage. The ball is passed to the kicker for a wide end run to his right. The back who is stationed out wide comes back and turns the defensive end in while the first man on the tandem on the right helps to pinch the defensive end. Play goes as indicated. Both guards may swing deeper.

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Ancient Swimming

(*Continued from page* 14)

support the conclusion that the Romans employed an alternate overhand stroke. Ovid, who tells the story of Leander, speaks of how he "swings" his arms, using an expression which in Latin is hardly less definite than the English. Propertius, another Roman poet, who lived at the beginning of our era, speaks of "the water that readily yields to the alternate hand."

While the Tiber figures most conspicuously in references to Roman swimming, this is scarcely more than a geographical accident. The increase of wealth among the Romans in the last century of the republic was reflected in the large number of country and sea-side villas which dotted Italy. The most popular sea-side resort was at Baiae, on the Bay of Naples. The beauty of the situation was equalled by the extravagance and luxury of its frequenters, and life was both gay and somewhat wanton. Propertius was greatly distressed to learn that his mistress Cynthia proposed to spend some time at Baiae, where, it seems to be implied, one of the diversions was swimming.

But wealthy men did not find it necessary to swim in the sea, for they built swimming-pools in their luxurious country homes. One of the best known is described by the younger Pliny in one of his graceful letters. He has spoken of the cold room, in which there are two "bath tubs," one on either side of the room, "plenty large enough when you consider that the sea is right at hand," and presently refers to the "wonderful heated pool from which one can gaze on the sea as he swims." Luxury indeed! It must be borne in mind, however, that a part of a Roman gentleman's entertainment of his guests, at this period, consisted of bathing together before dinner.

Public baths were introduced about the beginning of our era, and most of them were equipped with swimming-pools, which were usually neither very large nor very deep. These baths, or thermae as the Romans used to call them, were far more than their name suggests. In fact, they were like great clubs, with lounging-rooms, reading-rooms and auditoriums, besides the rooms and courts which were used as gymnasia and exercising-grounds, and the apartments actually devoted to bathing purposes. It is easy to understand, therefore, that the swimming-pool in one of these establishments might appear somewhat inconspicuous in its plan. The Stabian baths at Pompeii afford an excellent example of a small city's bath (fig. 10). A trapezoidal court in the center was used for exercise. On the east side of this is a series of large rooms used for warm and hot baths and as dressing rooms. On the west side

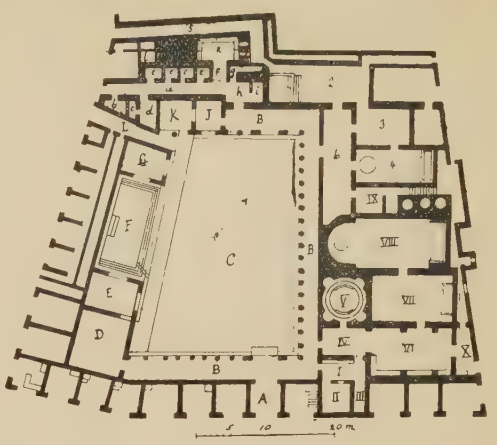

Figure 10. *Plan of Roman Baths* (*Pompeii*)

was another series of rooms, some used as dressing-rooms, and midway down the side was the piscina, or swimming-pool, measuring approximately 40 by 25 feet in area, and slightly less than 5 feet in depth. Apparently it was open to the sky and to the exercise-ground.

The Baths of Diocletian, whose vast ruins are the first to greet the eye of the newly arrived visitor to Rome, may be regarded as more or less typical of the several enormous establishments of the kind which the city boasted. The swimming-pool here was much larger, being 160 feet in width and 325 feet in length, yet even so it occupied only about one-thirtieth of the entire area of the baths. A glimpse of the swimming-pool and the adjacent halls is shown in a sectional reconstruction (fig. 11), which will convey a faint idea of the enormous size of the structure, whose "ruins have been built over and are at

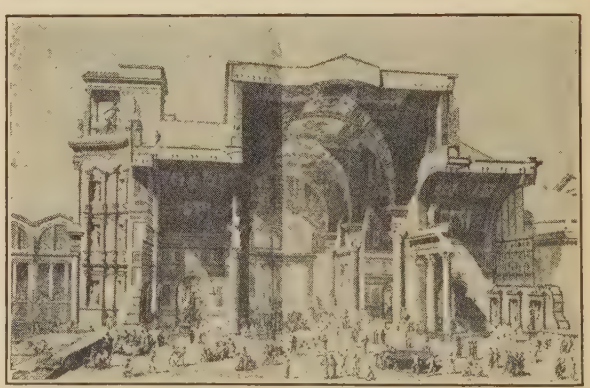

Figure 11. *The Baths of Diocletian*

(*Concluded on page* 42)

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present occupied by churches, a prison, a museum, an orphan asylum, a coal yard, and government offices," not to mention a palace, a modern hotel and a more modern garage. The sizeable church of Santa maria degli Angioli was built by Michael Angelo largely within what used to be the room of the warm bath, and the Museo Nazionale is housed within cloisters also built within the baths by Michael Angelo. A view of the court of the cloisters (fig. 12) is evidence enough that they were not restricted in space.

Figure 12. Renaissance Cloisters Built Within Ruins of Diocletian Baths

It is hardly probable that as many women as men acquired the art of swimming in ancient days, but women swimmers seem not to have been uncommon. The Andocides vase showed a woman swimming, and Scyllias, the under-water swimmer, had a daughter who was proficient in the art. In Rome we have mention of Cloelia and her friends from legendary days, and Propertius' mistress, Cynthia, seems to have been able to swim. More definite is the statement about Nero's mother, who swam to safety in the Bay of Baiae on the night when her son contrived to have her shipwrecked. Her maid also was able to swim, and assisted the escape of her mistress by pretending that she was the emperor's mother calling for aid.

It will have been noticed that with the exception of persons who had been compelled to swim for their lives, none of the swimmers who appear in the illustrations are clad. If there was a bathing costume used in ancient days, no hint of the fact seems to appear either in ancient art or ancient literature. Nudity was less objectionable to the peoples of classical times than today. What practices governed bathing at public sea-side resorts we do not know. In the thermae men and women bathed separately, at a rule, but the frequent repetition of legislation demanding separate bathing is the best indication that the laws were often honored in the breach rather than in the observance. At last, in the third and fourth centuries, promiscuous bathing became common. The first inclination of an American would be to brand this practice as immoral, but it is true that at the present time nude persons of both sexes bathe promiscuously in a number of countries in Europe and Asia, without regarding the practice as either immoral or immodest.

The significant facts are that swimming is a very old art, and that among classical peoples a large proportion of the men, and probably of the women knew how to swim; that there is strong probability that there were professional swimming instructors, at least in Egypt, Greece and Italy; and that the style of swimming for which there is the most abundant evidence was similar to the overhand style now preferred by modern devotees of the sport. Perhaps it is not incorrect to state that only within a few years has America become the equal of ancient classical lands in these respects.

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(*Concluded from page* 17)

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b. Health Knowledge
c. Health Attitudes
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8. Absence Survey
9. Hygienic Arrangement of Program
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   b. For Teachers
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2. A study to discover what activities the pupils and their parents engage in during leisure time.
3. Needs of pupils from a Physical Education standpoint.
4. Studies of skills desirable at various ages, and methods of securing them. (At present all teachers are working with pupils to discover skills needed to play the various fall games efficiently, and are trying with pupils to plan activities which will lead to the needed skills.)
5. Rating of the Present Physical Education Curriculum to see if it meets the needs of pupils.

Many other investigations will be planned as the work proceeds. It is a big undertaking, but as the work is completed, in the course of two or three years, it is hoped that Kalamazoo will have a better understanding of the meaning of its educational advantages. It is the earnest desire of the Physical Education department to do its share of the curriculum work, so that it will function effectively for the best interests of the citizens of Kalamazoo, young and old.

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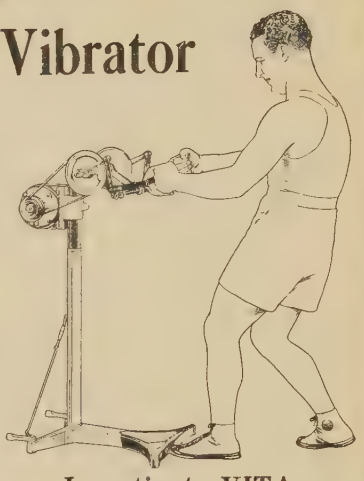

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Play Days versus Interscholastic Competition

(*Concluded from page 21*)

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(*Concluded from page 27*)

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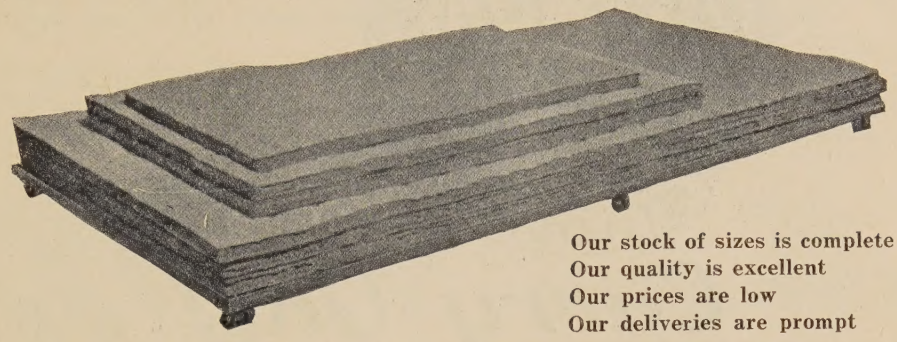

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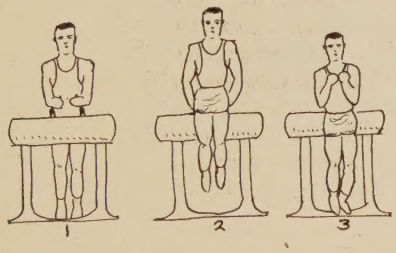
(*Concluded from page* 29)

6. (a) Approach. Run and grasp the pommels.



(b) Squat vault. Do not retain grasp on pommels, but thrust the body upward with the arms, the legs passing over the saddle.

Vary with any of the following:

1. With quarter turn R or L, with or without cartwheel.
2. With half turn R or L, with or without back roll.
3. With three-quarter turn R or L, with or without cartwheel.
4. With full turn R or L, with or without forward roll, front dive, head spring or hand spring.

In making turns keep legs straight and feet together.

(To be continued)

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Zone Defense in Basketball

(*Concluded from page 23*)

ket is now in easy shooting range of several players.

Another alternative for x5 is to feint. (See Diagrams Nos. 4, 5 and 6.) A floor bounce through the defense to x2, then by a pivot and back pass which shows the progress in Diagrams Nos. 5 and 6, x4 can either drive off at another angle for a pass or shoot at the basket.

The principle of correct offense is summed up in the following sentence. When a player with the ball in his possession passes to another player in an unguarded spot and the passer automatically moves to an unguarded spot—this is correct offense.

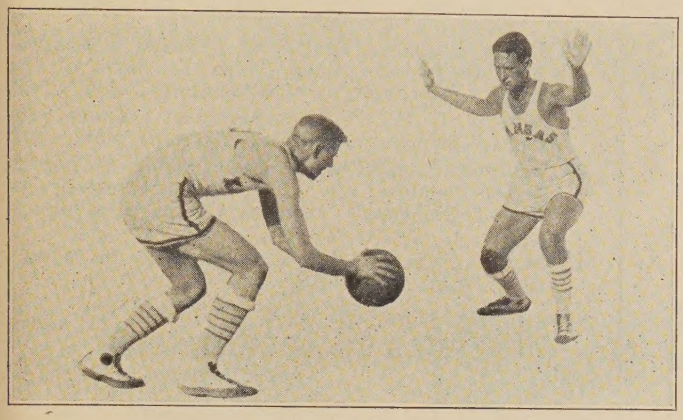

Diagram 4

Diagram 5

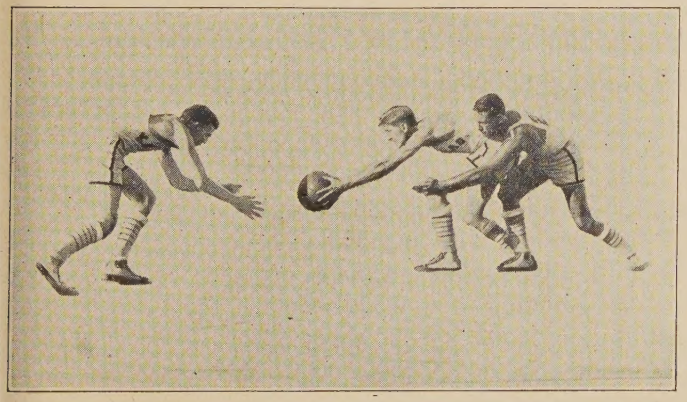

Diagram 6

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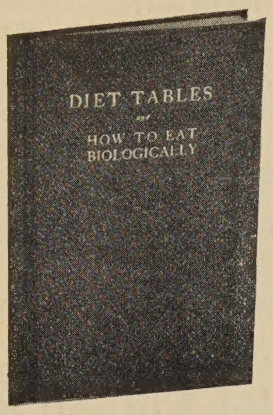

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Some Common Hazards in Physical Education Research

(*Concluded from page 7*)

tools of research, should come an advance in accurate knowledge, in scientific objectives, and in more valid and reliable experimentation, as well as a raising of the status of physical education to a position in the scientific world more in accord with its potential value as an education process.

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